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SATURDAY, APRIL 1, 1916.

Contents

Contributed Articles

ON THE CULTIVATION OF ENTAMEBA BUCCALIS.

(A Preliminary Note.)

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IT HAS apparently been conceded by many investigators that the Entamebae are so parasitic in their habits as to be non-cultivatable. This is probably not true of any parasite. When we fail to cultivate an organism it simply means that we have either not furnished it suitable food, or are unacquainted with some physical factor which influences its metabolism.

After quite a series of attempts with media of different composition, which we have used in a study of the parasitic flora of the mouth, we have discovered one upon which *Entameba buccalis* survives, and *Trichomonas intestinalis* undergoes luxuriant multiplication, along with most of the flora found about the gingival margin.

The protozoa grow best when the slants of media are kept under aerobic conditions, while the bacterial flora, which is almost entirely an anaerobic one, shows a representative, but comparatively moderate growth. Along with the protozoa, however, we have recognized such bacteria as the *Iodococcus vaginatus, B. buccalis maximus, Leptothrix sp., B. fusiformis, Spirochaeta irregularis, Spirochaeta dentium* and numerous other cocci and bacilli.

The medium: This has been recommended by W. BLAIR M. MARTIN [1] for the cultivation of

* From the Laboratory of Bacteriology in the Medical Department of the University of Cincinnati.

[1] W. BLAIR M. MARTIN: Jour. Path. and Bact., *15*, 76 (1911).

the gonococcus and allied organisms and has proven in our hands to be the most useful for this and many other purposes. It is a basic sodium phosphate agar, rich in ovomucoid. The final reaction should be about 0.5 per cent. acid to phenolphthalein. To this medium sterilized in tubes we have added varying quantities of sterile pleuritic fluid (collected aseptically from cases of tuberculous pleurisy and heated to 56° C. for five successive days). We have found on several occasions that *Entameba buccalis* survives for several days on "MARTIN'S pleuritic" when the pleuritic fluid is in the proportion of one to four or five of agar; and in the water of syneresis of such slants the *Trichomonas intestinalis* was carried through a series of subcultures, both when obtained from pyorrheal pockets and the feces of man.

The medium upon which the Entamebae showed active proliferation was a modified form of the above. The medium was made up without the basic sodium phosphate. This salt was then added and the medium autoclaved again and filtered and tubed. Pleuritic fluid was then added in the proportion of about two of the fluid to three of the agar. The tubes were solidified in the slanting position over night and the water of syneresis allowed to collect in the ice box for a day longer.

Entamebae and bacteria from the gingival margin of a capped tooth were introduced into the water of syneresis and incubated at 35° to 37° C. In twenty-four hours there was moderate multiplication of the Entameba (siz found in a loopful of the sedimented growth); in forty-eight hours these had increased greatly in numbers (eighty-four found in two loopfuls of the sedimented growth in the water of syneresis).

Immediately and for a short time after removal from the culture, and when sealed with vaseline under a cover glass, the Entamebae move about quite actively and appear like amebae of the *limax* type, although here the nucleus is invisible. In a half hour or so, however, the cytoplasm of the ameba becomes more viscous and the pseudopodia are irregularly thrust out slowly and the whole cytoplasm appears more glassy. This would appear to be due to a further reduction in the oxygen tension of the medium, resulting in a morphologic type, such as one most frequently encounters in preparations direct from the gums.

Moist preparations fixed in hot saturated bichloride of mercury and stained by GIEMSA'S method, or with MALLORY'S ferric chloride-hematoxylin method, show that these cultural forms possess the nuclear structure which is taken to be characteristic of the Entamebae.

We hope to be able to throw some light on the life history of this organism and make tests of its pathogenicity in the near future.

TRANSPLANTATION OF TISSUE.

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THE possibilities of conservative surgery upon the extremities which have resulted from experimental inquiry and clinical observation are vast. The number of works which have been published upon transplantation during the past few years is enormous, but they have not resulted in solving many questions, for different observers have arrived at opposite conclusions as a result of their studies. This lack of uniformity in results has often been due to the fact that the material, both clinical and experimental, has not been observed long enough and that the experimenter has approached his problem with mind already made up. Perhaps, unconsciously, he has led his facts rather than having permitted his experimental facts to lead him.

I. SKIN AND BONE TRANSPLANTS.

§ 1.

This is well indicated by the confusion which exists regarding such a simple matter as the epidermal skin graft. It has been my experience that the only successful epidermal grafts are autoplastic. But reports are frequently seen in which homoplastic and heteroplastic material have been used with success. GLUCK has made the statement that epidermal strips taken from patients recently dead heal as well as autoplastic grafts, while KRAUSE, in discussing GLUCK'S paper, stated that all except autoplastic skin grafts had been unsuccessful. How great is the difference in opinion concerning so simple procedure

may be indicated by the statements of LEXNER and DAVIS.

LEXER believes that autoplastic grafts are practically always successful, while homoplastic grafts are practically never so. LEXER finds that skin grafts (epidermal and cutis) may undergo any of the five following changes:

1. Acute gangrenous degeneration.
2. Apparent healing, followed in two or three weeks by complete separation of the grafts in association with suppuration.
3. Apparent healing, and, after three weeks, drying of the transplanted skin without suppuration, but with such scar formation as takes place in simple healing under a crust.
4. Apparent healing, followed by very slow cicatricial substitution.
5. Transitory healing.

DAVIS, from HALSTED'S clinic, comes to far different conclusions. He states that the majority of his grafts were autodermic, although he also obtained excellent results with grafts from amputated limbs and cadavers when taken within a few hours after accident or death. The skin of still-born children has also been utilized. From his experimental work, DAVIS has reported that autodermic grafts take better than isodermic. His experience convinces him that isodermic grafts are quite as successful as those taken under similar conditions from the individual himself. This applies especially to isodermic whole-thickness grafts, although THIERSCH grafts have also healed well.

It is hard to account for such divergences of opinion as these. Clinical experience has convinced me that, even in skin grafting, autoplastic grafts give the largest percentage of successes. The homotransplant usually is exfoliated after two weeks with suppuration.

The changes occurring in homoplastic skin transplants is shown in the histological studies of OSHIMA. As early as nine days after transplantation, at a time, therefore, when the grafts have a nearly normal appearance, microscopic examination betrays the beginning of marked degenerative changes. The epidermal layers are thinner than normal, and the epithelial cells, as well as the nuclei, are considerably changed. In a specimen twenty-eight days old the epithelium is lost, the cutis infiltrated, and no vessels are found. Many giant cells are found in the granulation tissue and their position, close to the grafts, indicates that they are probably foreign body cells.

These facts suffice to indicate the wide differences of opinion extant regarding the nature of the transplant to be used.

§ 2.

Conclusions based upon experimental work differ as to the fate and function of transplanted bone. BARTH no longer holds his earlier view that a transplanted segment of bone acts merely "as a scaffolding for developing osteoblasts," in other words, that it is simply osteoconductive. He accepts the view of AXHAUSEN, PHEMISTER, and others, that the compact bone of the graft is absorbed and replaced by bone formed from the periosteum and endosteum of the graft.

Fig. 1.—Diagrammatic sketch to show tube made from fascia lata which surrounds the proximal ends of the tendons and is attached distally to the periosteum. If the tendons are to be attached separately two fascial tubes are used.

Undoubtedly, as MACEWEN states, the vegetative capacity of a bone-cell is as great as that of an epithelial cell; and each graft proliferates from its center, the whole eventually fusing into one mass. In proportion to the size of the bone graft, the smaller the graft the greater is the proliferation. If small grafts of compact bone could be used, the bone would live, but in most cases we are compelled, by the nature of

the case, to use large transplants in order to maintain fixation and preserve form. Compact bone dies in large grafts because its physical properties do not permit of a rapid enough absorption of plasma to maintain the life of the bone until a blood and lymph circulation of its own is re-established.

The ideal graft should contain enough compact bone to maintain the required form and give a certain amount of fixation when needed, but not so much that there occurs to any extent cellular death, followed by substitution. This ideal condition is rarely, if ever, secured in bone transplantation. As it has been demonstrated that substitution of the compact bone takes place in greater part from the graft proper, the most active bone-forming elements, periosteum and endosteum, should be included in the graft. The

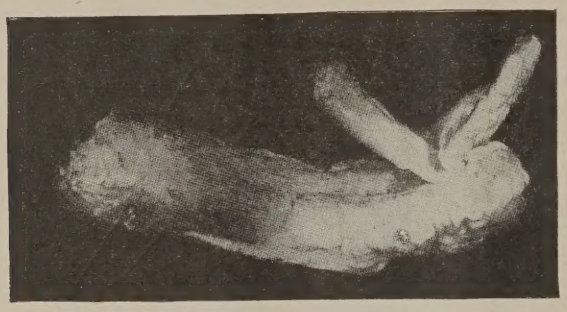

Fig. 2.—Tendon which formed following the operation. The finger was amputated 255 days after the fascial tube was inserted. The fascia remains intact, forming a sheath for the tendon which has developed from the proximal ends of the flexor sublimis and profundus tendon. The two tendons, separated by a thin connective-tissue septum, can be distinguished in the tube.

antero-medial surface of the tibia is to be preferred, I believe, to the crest of the tibia, as the source of the graft; for, in such a graft, cut through to the marrow, there is endosteum as well as periosteum, and enough compact bone to maintain the form of the graft and secure some fixation, but not as much as is usually taken in grafts cut from the crest of the tibia.

While the blood-forming elements of the marrow rapidly degenerate, the bone-forming elements come in intimate contact with the plasma, and are most favorably situated for the preservation of life and the assumption of early proliferative changes. LEXER reports some unpleasant experiences in cases in which marrow was included in the transplant. In some of these marked inflammatory signs (associated with mild fever) developed about the transplanted segment. The transplants usually, however, healed in position in spite of the inflammation. He believes the reaction to be due to the absorption of the products of decomposition of the marrow, therefore, in his later transplantations he removed the marrow from the graft with a sharp spoon, filling in the resulting dead spaces with a bone plug. The grafts in these cases were taken from amputated legs, and it is possible that this reaction followed the use of homoplastic transplants. The same reaction, often resulting in extrusion of the segment, has been observed where homoplastic tendon transplants have been inserted.

II. EFFECTS OF INFECTION ON BONE TRANSPLANTS AND THE USE OF BONE TRANSPLANTS IN INFECTED WOUNDS.

The reaction of transplanted bone to infection is of considerable interest, for it demonstrates more clearly than histological study alone that bone grafts remain viable. Infection occurred in a number of PHEMISTER'S experiments in varying degrees of severity and with different types of transplants. A severe infection with extensive suppuration usually caused death, with subsequent extrusion of the entire transplant. In the presence of a mild infection the transplant took in many cases, but it behaved differently from one placed in a sterile field. The periosteum and endosteum may survive and the circulation be re-established in the presence of a mild infection, the changes occurring in such cases resembling very closely those associated with osteomyelitis in normal bone. The surviving periosteum forms a layer of new bone about the cortex which, both in its amount and coarse spongy character, resembles the involucrum surrounding the sequestrum in cases of osteomyelitis. When the periosteum is removed from the transplant, infection is much more apt to cause the death of the entire segment, for the compact bone has a much poorer chance than the periosteum to get sufficient nourishment, and, consequently, the entire transplant is likely to die.

There have been but few reports of clinical observations of the effects of infection upon bone transplants. KLAPP, some years ago, reported

a case of bone transplantation in which, after apparently normal healing, a temperature of 102.5° F. developed, and an abscess which demanded wide incision formed at the site of the operation. Two sinuses formed which led down to the transplanted bone, but after a cortical sequestrum measuring 3 cm. in length and 2 cm. in width had been extruded, the sinuses healed. The end result was good. KLAPP came to the conclusion that the ability of the transplant to form an involucrum which separated off the thin, dead cortical bone demonstrated that the transplant was alive and remained so after being transplanted. Similar experiences have been recorded by TOMITA, HASHIMOTO, and AXHAUSEN. In the case reported by AXHAUSEN an attempt had been made to replace the upper end of the humerus, after resection for recurrent carcinoma, by a metatarsal bone. A mild infection occurred, but in spite of the fact that the transplant was surrounded by pus, total sequestration did not occur. Sequestration of the head of the bone occurred, but the shaft healed in position and a firm union was established between it and the shaft of the humerus. A mild infection does not lead to total sequestration, which would be expected if the transplant were dead and acted only in an osteoconductive capacity.

Clinical findings analogous to those observed in experimental work seem to me to demonstrate conclusively that the transplant remains viable and reacts to infection like normal bone, and that even in the presence of severe infection, when death of the entire transplant might be expected, it may still remain able to take part in involucrum and sequestrum formation.

The transplantation of bone into infected areas has not often been attempted. Two cases which I have had illustrate the use of bone grafts for purposes of mechanical support in the prevention of radial deviation of the hand. The transplants were inserted with the idea that they might act as mechanical supports and with the feeling that even if subsequently they should have to be removed they would, nevertheless, have served the purpose of preventing a deformity which could not have been avoided by other means. These cases served to prove the value of such a procedure. The immediate insertion of bone grafts into infected areas permits the grafts to act as mechanical supports and thus to prevent deformity, even when it proves necessary to remove them later. In many instances, however, the grafts will remain viable, and so hasten convalescence. Bone grafts inserted into infected fields will live, and even when sequestrum formation occurs, necessitating a second operation, the bone grafts will have acted as mechanical supports and prevented deformity, while convalescence will often be considerably shortened.

When infection is introduced at the time that a graft is first inserted the effect is more harmful and the greater part, or even the entire graft, is apt to be lost. An essential in the transplantation of bone is perfect hemostasis. A blood-clot about a transplant hinders the permeation of plasma into the bone and prevents vascularization.

III. TRANSPLANTATION OF BONE INTO CAVITIES LEFT AFTER CURETTAGE OF CENTRAL GIANT-CELL SARCOMAS.

BLOODGOOD has suggested the transplantation of bone into cavities remaining after curettage of central giant-cell sarcomas. The procedure would avoid destruction or removal of articular cartilages with consequent preservation of joint function in those cases in which the central giant-cell sarcoma encroached upon the articular cartilage.

Bone grafts made into cavities, even when placed in contact with living bone, do not survive in the majority of cases. Such grafts are, moreover, often unnecessary, for the osteogenetic power of the thinned, cortical bone left after operation upon a central giant-cell sarcoma, or a fibrous osteitis, is great enough to form bone capable of weight-bearing. The main consideration in lesions of this character is obliteration of the cavities, which give rise to sinus formation and chronic discharge, if permitted to persist.

Our present-day views regarding bone grafts may be summed up as follows:

1. Experimental and clinical work demonstrates that the compact bone of a bone graft is gradually absorbed to be replaced by new bone formed from the periosteum and endosteum of the graft. The periosteum of bone into which the graft is inserted also plays an important role. It should be saved and brought in contact with the periosteum of the transplant or over the ends of this. This conclusion is now admitted by BARTH, who originally held that a bone graft has merely osteoconductive function.

2. The viability of bone grafts is well indicated by their reaction to infection, for involucrum and sequestrum formation occurs in infected grafts, or clean grafts placed in infected areas, just as it does in normal bone.

3. The bone grafts placed in cavities left after curettage of central giant-cell sarcomas, or fibrous osteitis, do not survive in most cases, for the bleeding which occurs into the cavity prevents vascularization of the graft. Such cavities are closed most satisfactorily by bone plugs of some kind.

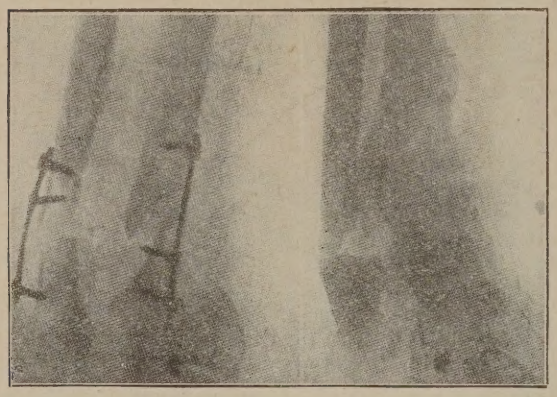

Fig. 3.—Infected compound fracture which had been plated. Sequestrum has formed in shaft of radius above upper end of plate. Line of separation can be clearly seen. No involucrum of sufficient strength had formed to prevent radial deviation of hand. The transplant was removed from the ibia and inserted into the infected area to act as a mechanical support. Wound closed without drainage. Healing within ten days followed by sinus formation with discharge of small spicules of bone. Sequestra later removed from transplant. Transplants placed in infected areas will live. Involucrum and sequestrum formation may occur in the transplant, indicating that transplanted bone remains viable and does not act merely as a scaffolding for osteoblasts.

4. In the treatment of recent, or old, ununited fractures, the inlay graft proves more satisfactory than the intramedullary splint, for the endosteum of the graft then comes in contact with the endosteum of the bone, while the periosteum of the graft may be sutured to the periosteum of the bone. In the use of the intramedullary splint considerable endosteum is destroyed in the preparation of the medullary cavity for the reception of the graft, and this loss can not well be borne, for endosteum plays an important part in bone repair.

5. The compact elements die in a bone graft because of their physical properties, which hinder their rapid permeation with plasma. That bone graft is best which contains enough compact bone to give form and maintain fixation, while it also contains periosteum and endosteum from which new compact bone may be formed. Grafts taken from the antero-medial surface of the tibia are better than those taken from the crest.

IV. TRANSPLANTATION OF TENDONS AND FASCIA.

§ 1.

But few attempts have been made to repair tendons by the direct transplantation of tendons or fascia, although it has been demonstrated repeatedly that both tissues may be transferred for the repair of defects in tendons following trauma or infection. Alloplastic methods, with catgut, silk or silver bridges, have never been entirely satisfactory, for pressure necrosis often follows insertion of the foreign material and proliferating neighboring tissues invade the bridge and limit the function of the newly formed tendon. This criticism applies particularly to the reconstruction of tendons lost through trauma or infection, and not to the transfer by the silk-strand periosteal method, as practiced by LANGE.

Before discussing the practical application of tendon and fascial transplantation, the fate of transplants under different conditions, as determined experimentally, should be considered, for the changes occurring in them suggest methods to be employed in after treatment to insure success.

The early attempts at direct tendon transplantation were unsuccessful because hetero transplants were used and because infection was common. REHN'S early work demonstrated that tendon transplants behaved differently, depending upon whether they were made to assume the function of a tendon early after being used to repair a defect, or were merely transplanted between muscles, or into subcutaneous tissues, and thus deprived of functional activity.

Tendon segments when transferred into a defect in another tendon show changes which indicate their viability and power of growth, providing functional activity is assumed early. I have examined such tendon segments after transplantation into the tendo Achilles of dogs, seven, seventeen, twenty-one, thirty-five and fifty-nine days after transplantation. Successful transplantation occurred in the animals which were encouraged to use their limbs immediately after

operation and in which no immobilizing dressings were applied. Often the dog could walk easily and with little or no limp immediately after the operation.

The changes occurring in a transplanted tendon made to functionate early, relate mostly to size and form. At the end of seven days a transplanted segment, which has not increased much in size, lies in a mantle of grayish-red granulation tissue, which is usually separated from the transplant proper by a delicate layer of connective tissue. At the end of seventeen days a transplanted segment is definitely enlarged and the surrounding layer of granulation tissue has formed rather intimate union with it. At the end of three weeks the transplanted segment is two to three times as thick as the tendon on the opposite side. The three separate strands which form the tendo Achilles have fused and the cavities of the synovial sheaths have become obliterated. The transplanted segment becomes fusiform and no longer tapers to the point of attachment, as does the normal tendon. The

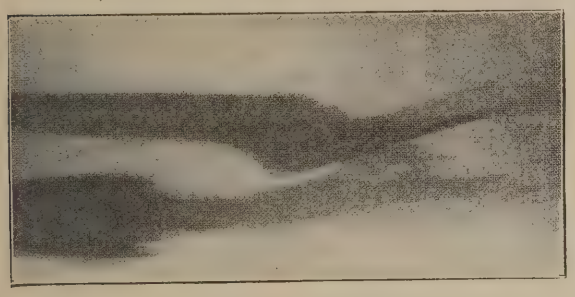

Fig. 4.—Reconstruction of the tibia by bone transplantation after a part of it had been removed following an osteomyelitis developing after a compound fracture. Appearance of the transplant two years and three months after operation.

transplant is usually widest at the middle, there being a gradual reduction to the line of suture. Usually the exact extent of the transplant can no longer be determined, for the enlargement, to some extent, involves also the ends of the tendon into a defect of which the transplant has been inserted.

All these changes mentioned are most pronounced in the third week after transplantation, although they are still quite marked as late as five weeks. They are due to proliferative changes in the subcutaneous tissues surrounding the transplanted segment, and in the peritendineum externum and internum, as well as to an edema of the transplant resulting from an imperfect reestablishment of the circulation. Proliferation on the part of the peritendineum externum and internum is an exceedingly important factor in direct tendon transplantation and, as I hope to show later, is probably directly related to the assumption of early function by the transplanted segment. By the end of three weeks the peritendineum externum has proliferated to form a thick mantle of tissue surrounding the transplant and carrying to it numerous nutrient capillaries. When the proliferative changes are marked, the mantle of proliferating tissue and the transplanted segment become closely united. The fibrillæ of the transplanted tendon, after three to five weeks, are larger than normal, gnarled and twisted, and often separated by granular masses. Remnants of such changes may be found as late as fifty-nine days. They are not, I think, regressive in character, for the nuclei and fibrillæ react normally to stains.

While some regressive changes occur in all transplants, as evidenced, for example, by some of the fibrillæ undergoing hyaline degeneration, the transplant as a whole remains alive, becoming invaded neither by leucocytes nor round cells. The transplanted segment does not act as a bridge to convey tenoblasts from the proximal to the distal end of the divided tendon; and formation of new tissue in a transplant, even when it has undergone some regressive changes takes place from the tissues of the transplant itself.

§ 2.

As demonstrated by Rehn, tendon transplanted into subcutaneous fat, or intra-muscularly, behaves entirely differently. Rehn found in intrafascial transplantation, that the half of the tendon lying upon the fascia was well preserved, while regressive changes, similar to those occurring after intra-muscular implantation, took place in that part of the tendon not related to the fascia. The pieces of tendon transplanted subcutaneously tend to shrink. When removed, some five weeks after transplantation, they are found to be but one-third as large as when placed in a tendon defect and made to functionate. Although the pieces can still be easily identified and have all the physical properties of tendon, except for a

considerable loss of luster, they show no proliferative changes in the peritendineum, as do tendon transplants which have been made to assume function early. In a piece of tendon transplanted subcutaneously and removed four weeks later, the three bundles of the tendo Achilles could be easily distinguished from each other and their sheaths made out.

When transplanted into subcutaneous fat, tendon shrinks to form a small mass. As close adhesions form early between the tendon transplant and the subcutaneous fat, good provision is made for nourishment of the transplanted piece even in these cases. Microscopic examination of piece of tendon transplanted into subcutaneous fat shows that the fibrillæ and nuclei stain well, and that the transplanted segment may be regarded as viable. There is, however, some leucocytic and round cell infiltration and no evidence of proliferative change. The peritendineum of the transplanted tendon remains perfectly passive in the subcutaneous fat, there being no apparent effort of the formation of a cell mantle. Such a transplant may be compared to a paralyzed limb. It is alive and has a circulation, but it becomes shrunken.

The differences in behavior between pieces of tendon transplanted into a tendon defect, or into subcutaneous fat, can not be due to differences in nourishment, for tendon transplanted intramuscularly or subcutaneously, has as favorable conditions provided for its nourishment as that transplanted into a tendon defect. The only real difference between the two is that one assumes early the function for which it is intended, while the other is permitted to undergo an atrophy quite comparable to a disuse atrophy, which eventually results in its death and absorption.

§ 3.

Early assumption of activity is, I believe, one of the most important factors—I take it for granted that the technical work in transplantation has been correct—in guaranteeing the success of direct tendon transplantation. The importance of functional activity for the life and growth of tissues in general has been advanced and defended by ROUX, and I know of no tissue in which the principle can be more strikingly illustrated than in transplanted tendon. Whether or not the changes consequent upon use are secondary to the hyperemia, which follows such early and continued function by the part into which the transplant has been made, I do not know, but it seems probable that such is the case. I have given this matter of functional activity emphasis, because I believe it of especial importance.

Experimentally I have found homo-transplants and auto-transplants to behave alike. REHN, however, has reported a homo-transplantation in which the tendon sloughed out some months after insertion. He had transplanted a tendo Achilles to make a patellar ligament. While homo-transplants live when made experimentally, I think it better in man to use auto-transplants, for this will assure a greater number of successes. Reactive changes about the transplanted segment are, under such circumstances, less marked.

Early functional activity contributes to the growth of the transplant and prevents, to some extent, the development of adhesions between it and the surrounding tissues, although not entirely. Most alloplastic methods intended to prevent the formation of adhesions between tendon and surrounding tissues have proved unsatisfactory. In many cases which require tendon transplantation provision is first made for a fat pad. This fat pad is then tunneled when the tendon transplant is inserted. A patient who had lost the extensor tendons of her right hand in a hot roller, and upon whom I operated in this fashion five years ago, has now almost perfect motion of the fingers. The fat originally transplanted with the skin to cover the back of the hand and through which the tendon transplants were made has largely contracted but little adhesion with the transplants has occurred, judging from the free motions of the tendons.

That adhesions do occur between fat and tendons, which may interfere somewhat with the function of the latter, is indicated by the number of instances in which secondary operations for purposes of tenolysis have been resorted to after direct transplantation.

§ 4.

MCARTHUR has employed a method in the preparation of the transplant which I believe to be of distinct value. The fat overlying the fascia lata is not always suitable for transplantation

purposes, because of its loose structure. In the plan advised by McArthur, an attempt is made to cover the transplant with condensed, closely adherent fat. In his case he used fascia lata for repair, but the same principle may be applied to tendons, if tendon is preferred to fascial transplantation. To illustrate the steps of the operation as practiced by McArthur, I shall use the details of the clinical history of one of his patients,

Eight months before operation the right forearm of this patient was caught in a corn shredder and its anterior surface, including tendons, nerves and vessels, from the wrist to the upper third of the forearm, were torn away. A portion of the anterior surface of the ulna was lost, but the bone was not broken. No attempt was made at the time of accident to unite the tissues. The denuded surface healed after some five weeks. The patient, when examined, could not flex his fingers, which were anesthetic. Motion at the wrist was good.

The first operation was performed May 3, 1913. At this time the scar was removed from the anterior surface of the lower half of the forearm, and the ends of the median nerve and of the deep and superficial flexor tendons were dissected out above and below. A large abdominal, pedunculated flap, including a thick layer of subcutaneous fat, was transplanted to this raw surface. Primary union occurred and the pedicle was cut on the tenth day.

May 17, tissue was prepared for tendon repair. A strip of fascia lata was raised from the right thigh and subcutaneous fat was dissected free and placed about this strip, which remained attached at each end. The wound was then closed and the patient asked to return for implantation of the fascial strip a month later.

June 28, 1913, forearm flaps were made, exposing the annular ligament at the wrist joint. The incision was carried up the middle of the forearm through the skin, and fat graft taken from the abdomen, and the flaps thus formed were undermined laterally on each side, to provide space for insertion of the tendon. The flexor tendons anterior to the wrist joint were loosened until they moved freely in their sheaths, flexing the fingers. The dissection was then carried to the upper forearm in order to demonstrate the ends of the flexor muscles. Considerable time had been taken and it was decided to complete the operation at a second sitting. The wound was closed after a rubber drainage tube had been inserted to keep the tract open between the upper and lower ends of the tendons.

On June 30, 1913, the operation site on the right thigh was reopened and the graft exposed. Abundant fat, closely adherent, was found about this strip of fascia, which had previously been freed from its bed. The forearm was reopened and the tract in which the drainage tube lay was found blackened and discolored, probably due to the sulphurous acid in the piece of new tubing. The cut ends of the tendons, exposed two days earlier, were also blackened, necessitating removal of about one-half inch from each tendon. The fascia lata graft, with its sheath of fat, was transferred to the forearm and sutured above to the flexor muscles, and below to the superficial and deep flexor tendons of the fingers. The hand was dressed with the fingers in a flexed position, in order to take all tension off the suture line.

In October, 1913, the patient reported that he was so much improved by the operation that he desired further surgical aid, in the hope that flexion of the thumb and sensation in the hand might be improved.

On November 3, 1913, the skin was reflected over the anterior aspect of the wrist and thumb to pick up the flexor tendon of the thumb. At the same time the transplant at the point of insertion into the superficial and deep flexors, which had acquired local adhesions, due to a localized suppurative process following the previous operation, was loosened. The flexor tendon of the thumb was found, dissected free and stitched to the side of the transplant. A thin layer of fat was taken from the thigh and wrapped about the tendon.

At the present time flexion of the fingers is good. They can not be flexed individually, but the function of the hand is so much improved that the patient can grasp a pitchfork and work about the farm.

§ 5.

This procedure advocated by McArthur seems to me to promise more than any yet suggested in preventing adhesions between transplants and surrounding tissues. In some cases secondary tenolysis has been done, the transplant being surrounded with fat at a secondary operation. But in all these cases the amount of scar tissue was found to be increased, the fat under such

circumstances being less suitable for transplantation than when the fascial strip of tendon is dissected up and the fat surrounding it is allowed to become condensed.

In one case I attempted to prevent secondary adhesions by using a fascial tube for the reconstruction of a tendon. The patient, who is a physician, had been bitten by a patient upon the ring finger of the right hand fourteen months before entering the hospital. A severe infection developed so that thirteen days after the injury the terminal phalanx and a part of the middle phalanx, with the flexor tendons, had to be removed. The wound continued to discharge

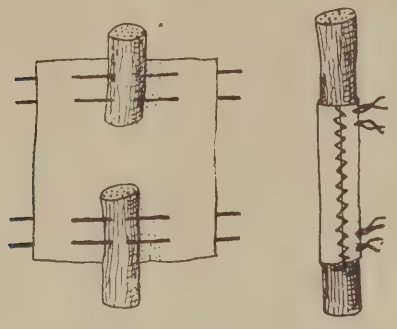

Fig. 5.—Diagram showing method of construction of fascial tube.

for two months. At the time I first saw the patient there was present a scar upon the anterior and posterior surfaces of the ring finger, which extended to the middle of the hand and down to the proximal transverse fold. The ends of the flexor tendons could be felt.

I attempted to reconstruct these tendons by means of a fascial tube. A piece of fascia, measuring about three inches in length and one-half inch in width, was removed from the fascia lata of the right thigh. A flap was dissected up from the volar surface of the finger, the incision being carried through the inter-digital fold into the palm of the hand. The ends of the tendons were dissected free from a dense scar in which they were imbedded, and a fascial tube was formed which surrounded the ends of the tendons on the proximal side and was prolonged to the periosteum of the middle phalanx distally. Immediate active and passive motions were encouraged, which, however, proved impossible because of pain. After eight days, however, considerable active motion was possible.

After some weeks the patient could flex the middle phalanx about 80 degrees, and when the newly formed tendon was held against the bone, the aponeurotic transverse bands having been destroyed, the finger could be flexed still more.

Fascial transplantation, either by means of strips or tubes, is especially serviceable in the repair of common extensor tendons. These tendons require but little play to exercise full function, and adhesions, even when present, providing they are not too firm, do not seriously interfere with the function of the transplant. There is but little difficulty experienced in inserting either fascial strips or tubes. This procedure will, I believe, prove of great value in the repair of extensor tendons and the principles of the operation are so well established that a large proportion of successful attempts may be expected. I prefer fascial transplantation to tendon transplantation in these cases, for the supply of fascia is practically unlimited.

§ 6.

One of the greatest difficulties in the transplantation of the flexor tendons is the reconstruction of the transverse band. In the case cited above, of fascial tube reconstruction, considerable impairment of function was caused by the newly formed tendon leaving the bone each time flexion was attempted. The patient soon discovered that he could greatly increase the amount of flexion by holding the tendon against the bone. REHN has encountered the same difficulties after transplantation of tendon to repair defects in the flexor tendons. When a ring was worn, holding the transplanted tendon down to the bone, the ability to flex the finger was markedly increased.

The play of the flexor tendons is greater than that of the extensors, and they are grouped so much more closely in the palm that slight adhesions may interfere seriously with function, and technical difficulties are increased when the transplantation must be carried high into the palm.

It is but rarely, I believe, that tendon transplantation is required after direct severance of a tendon without loss of substance, for even when the tendon has retracted to the proximal end of the sheath, suture is usually possible, and if after-treatment is assiduously carried out, function may be almost perfect.

In tendon transplantation, in repair by fascial strips or tubes, and in the uniting of tendons,

early use of the tendon is essential. A type of suture must, therefore, be employed which permits of this early function. The DREYER or FRISCH suture with silk or fine chromic catgut answers the purpose well, as it has sufficient grasp upon the tendon to prevent separation of the ends and still not enough to interfere with the life of the tendon tissue.

V. FASCIAL TUBULIZATION IN THE REPAIR OF NERVE DEFECTS.

It is difficult to determine the value of the different methods which have been employed to promote reconstruction of defects in nerves caused by accident, after resection because of

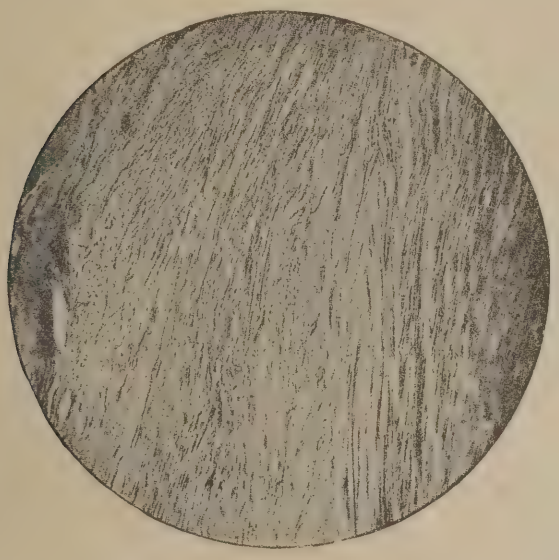

Fig. 6.—Section of regenerated segment (within fascial tube) 1.5 cm. below level of plane of proximal section, four weeks after operation (from photomicrograph X 60).

painful scars, malignant growths, etc. The clinical reports are often meager and in many instances the patients have not been traced long enough to permit of any definite conclusions concerning the ultimate result. The results frequently admit of more than one interpretation. In many of the cases reported, sensation and motion have not been carefully tested, and often, in estimating final results, account is not taken of the fact that sensation, and even motion, may be present, at least to some extent, in the area supplied by the nerve which had been divided or resected.

§ 1.

VANLAIR (1882) first suggested that defects in nerves might be repaired, if a pathway were provided along which the axis cylinders developing from the proximal stump might pass to invade the distal part of the nerve. A number of different materials, such as silk protective, fresh and hardened blood vessels, epidermis, magnesium tubes, hardened gelatin tubes, etc., have been used in clinical and experimental work for this purpose. That none of them is highly satisfactory is indicated by the lack of uniformity in end results reported by different authors and by the few successes, in toto, that have been made matter of record.

HUBER, after careful experimental work, came to the following conclusions concerning the bridging of nerve defects:

1. It is possible to restore functional activity to the peripheral part of a divided nerve with loss of substance, if the resected ends are united by a segment taken from some other nerve trunk, by a catgut bridge, a bone drain or a tubular suture.

2. The most favorable results follow implantation of a nerve segment, the two ends of which have been sutured with one or several catgut sutures to the resected ends of the injured nerve.

3. Regeneration of the peripheral end of the cut nerve results through the outgrowth of new axis cylinders from the unregenerated axis cylinders of the proximal stump, the budding axis cylinders following the paths of least resistance to reach the peripheral part of the resected nerve.

4. Degenerated fibers of an implanted nerve segment offer more favorable mechanical conditions for the down growing of axis cylinders than bone drains or the loose connective tissue which supplants catgut sutures. This is proved by the fact that the newly formed nerve fibers take a straighter course and are more regularly arranged after the first procedure than when the latter ones are employed.

KILVINGTON, in his review of the literature, finds that the results of homoplastic nerve transplantation are uncertain. He (SHERREN reports reports one success in six cases of his own and

in twenty cases collected from the literature found which could be regarded as successful. He found records of but two cases of autoplastic nerve transplantation, of which one was successful), experimented with free nerve transplantation, obtaining poor results with heterotransplants, fair results with homotransplants, and good ones with autotransplants. With autotransplants he obtained what he considered functionally perfect results in five out of seven cases. The gross appearanec of the regenerated nerve was found good on examination and surrounded by but few adhesions. Once he bridged a gap of two inches in the sciatic nerve. After one hundred days there was complete recovery of sensation and motion.

He made microscopic examination of but four cases. KILVINGTON believes that the axones of the free transplant survive and assume function. This position is untenable in the light of recent and past neurologic research, as it has been demonstrated conclusively that the axis cylinders degenerate in a free transplant and that the sheaths merely form conduits through which the newly formed axis cylinders may pass.

§ 2.

The best results in transplantation are obtained by the use of tissue removed from the individual in which the repair needs to be made. Since nerves and blood vessels frequently can not be sacrificed to bridge defects in nerves, it seemed to me that a tube formed of fascia, providing it did not subsequently collapse and undergo secondary cicatricial contraction, might prove ideal, for the supply of fascia is unlimited. From it a tube of any size may be fashioned and this be applied to the nerve in question. Fascia, when properly treated, remains viable without formation of adhesions.

As KIRK and I have demonstrated experimentally, defects in nerves may be successfully bridged by such fascial tubes. Histologic preparations show that the continuity of the nerve is re-established. The medullary sheaths do not reform until later. These are formed very late in the process of nerve regeneration. Regeneration of the fibers which bridge the gap takes place entirely from the proximal stump, as previously shown by RANSON, RANVIER, VANLAIR and FORSMANN.

The proliferative changes in the proximal stump are very active. From fifty to one hundred times the number of axis cylinders normally found in a nerve are formed. If one out of fifty of these axis cylinders enters the empty sheaths of the distal segment it seems certain that both an anatomic and physiologic restoration of the nerve may occur. If only comparatively few of the axones are properly restored functional activity of the muscles supplied by them will be resumed.

The time required for the bridging depends on the length of the defect, the age of the animal and the amount of tension exerted on the nerve ends. A gap of one centimeter with proper use of our technique will be bridged in nine weeks, the axis cylinders at this time having passed well into the distal segment.

Our oldest observations refer to animals ten and sixteen and one-half weeks after tubulization. VON FLEISCHHAUER'S clinical observations indicate that a cicatrix in a nerve usually contracts some seven or eight weeks after injury. Our oldest experiments, therefore, have passed this critical stage without evidence of secondary contraction in the tube. We find that the tube often thins out so as to be almost indistinguishable from the perineurium, and with proper technique we believe that the possibility of cicatricial contraction is excluded.

ON A RAPID METHOD OF CULTIVATING THE GONOCOCCUS.*

(A Preliminary Note.)

WM. B. WHERRY, A.B., M.D.,
WADE W. OLIVER, A.B., M.D.,
CINCINNATI.

MOST of those who have worked with the isolation of the gonococcus from exudates admit that its cultivation is attended by many difficulties and uncertainties. The large number of special media recommended attest to this fact.

In our hands a number of such media gave us no results. Finally we were successful in obtaining cultures from four cases of vulvo-vaginitis in children and from the urethral pus of an adult male, by using the sodium

* From the Laboratory of Bacteriology in the Medical Department of the University of Cincinnati.

phosphate agar containing ascitic or pleuritic fluid, as recommended by W. Blair M. Martin.[1] Sometimes, however, we obtained no gonococcus colonies at all on this medium when control smears showed that thousands were present in the material inoculated, or again from such material we would get half a dozen or so colonies. Under such conditions, the mixed flora of the vagina makes isolation difficult and uncertain.

Recently we have discovered that the gonococci, found in the urethral pus of a boy, four years old, thrive best, and so far as our experience goes thrive only at a partial oxygen tension. Tubes of Martin's pleuritic, inoculated direct from the urethra, yielded no gonococcus colonies when incubated aerobically, although colonies of diphtheroids appeared in forty-eight hours. However, control tubes, inoculated in the same way and attached to freshly inoculated agar slants of bacillus subtilis by means of glass and rubber tubing, yielded hundreds of colonies. When isolated in this way the gonococci can not be subcultured aerobically, but partail tension subcultures grow promptly. The question is, are the aerobic strains heretofore isolated the gonococcus? Apparently inoculation experiments performed on man in the past answer in the affirmative. Then we must assume that while the majority of the gonococci are microaerophiles, a few become adapted to aerobic growth.

It is evident that growth under partial oxygen tension may give us a different antigen and we hope to test this point out in the near future.

The Ohio Hospital Association will meet in Cincinnati, May 24, 25 and 26. It will be the occasion for extended discussion of the problems relating to hospital management. There are crying evils in many of the smaller institutions of the State which demand recognition ere their removal be effected. Among the more important of these are overcrowding, the inadequacy of nurses in number and training, and poor provisioin for isolation of contagious diseases. If the visiting hospital physicians and superintendents from throughout the State really wish to rise above the peructoriness which it seems is easily acuired in hospital work then the Cincinnati General Hospital may prove to them an inspiration for better work.

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[1] W. Blair M. Martin: Jour. Path. and Bact., *15*, 76 (1911).

ACTIVE IMMUNIZATION IN PATIENTS SUFFERING FROM HAY FEVER.*

Oscar Berghausen, B.A., M.D.,

CINCINNATI.

WE look upon individual disposition to hay fever as a pollen protein sensitization, usually acquired during any period of life, though it may have been inherited.[1] The first symptoms are manifested in the mucous membranes of the nose, eye and throat, though later the general system becomes affected. The mucous membranes soon become hypersensitive and secondary invasion by micro-organisms complicates the clinical picture.

In our studies in Cincinnati during the past summer, delay was caused by improper methods employed in gathering the pollen from the various plants. This is quite a study in itself, and is greatly simplified if one is fortunate enough to secure the services of a competent and willing botanist. Since patients suffering from the so-called June cold are susceptible to the pollen of grasses, and those suffering from the autumnal catarrh are susceptible to the pollen of the various dicotyledons, work in this particular field of specific therapy begins in May and ends with the beginning of October.

In this community the June cold is the less common of the various hay fevers, though undoubtedly many are afflicted with this particular form of protein hypersensitization, without being aware of the fact. We have thus far been unable to make studies of this earlier form.

During the past summer, sufferers from the autumnal catarrh began to complain about August 14. Usually a week or two elapses before the systemic symptoms become annoying. He who doubts that our ordinary ragweed is a common cause of this affliction, need only ask a victim to accompany him to the country. Within a few minutes the patient, for that he really is, begins to sneeze, and soon urticarial-like eruptions appear about the body. This gives

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*From the Serological Division of the General Hospital, Cincinnati, Ohio.

[1] For a discussion of hay-fever see K. K. Koessler; Forchheimer's Therapeutics of Internal Diseases, *5*, 671, New York (1914); R. Claude Lowdermilk; Jour. Amer. Med. Assoc., 65, 141 (1914).

us a clue as to the therapy which may be employed, for carefully graduated injections of the responsible pollen suspended in glycerin-phenol-salt solution, may materially assist in alleviating the symptoms. Those treated last summer were much benefited in so far as they suffered less than ordinarily from the annoying asthmatic symptoms, despite the fact that the treatment was begun after the first symptoms made their appearance. We should really begin with injections a month or two in advance, so that the system has become fortified before the real season begins.

When the membranes have become irritated, micro-organismal activity complicates the clinical picture. Autogenous vaccines should then be prepared for the patient. During the past summer we used only aerobically grown organisms in preparing the vaccines; next summer we shall endeavor to employ anerobic cultures as well. It is not unusual for the patients to state that they derive as much benefit from the vaccines as they do from the pollen extracts. We have found little value in the use of excessive amounts of alkalies during the period of increased bacterial activity.

When the patient is first seen a careful history of previous attacks should be obtained. Frequently patients state that they are susceptible to the pollen of the grasses as well as to the pollen of the dicotyledons, but the one variety may be stronger in its effects than the other. Certain patients afflicted in the north will find relief in the south, during the height of the season. This shows that anyone wishing to become expert in this particular field of immunization must make a thorough study of the prevailing causes of these catarrhs in his particular community. Proper extracts should be selected and skin tests performed upon the patient. At first, only minimal doses should be used until the particular needs of the patient have been determined. It is not unusual for such individuals to be sensitive to a variety of pollens, in which case a mixed extract should be employed, or at least the one to which the response has been the greatest. We are in the habit of making the vaccine injections on different days, or in different parts of the body, to determine, if possible, the general and local effects separately.

Simultaneous studies of the blood picture were made in a few instances. As a rule, the total white count is low, ranging from 4,000 to 6,000 per cubic millimeter of blood; in only one case did the count reach 10,000. There is a tendency toward polynucleosis; eosinophilia was not observed. The red cells are not much diminished and may even be increased in number through the treatment.

In conclusion it must be emphasized that only extracts which have been freshly prepared should be employed. Proteolysis incident to preservation of the extracts may cause them to develop marked toxic properties. The extracts will then produce reactions upon injection. Caution should, therefore, be employed in the use of such products as the biological laboratories will, no doubt, soon place upon the market.

Every physician in actual practice for a decade or more will have observed the steady diminution in the visits of detail men. Since the determined stand on the proprietary medicine business inaugurated some years ago by the Council on Pharmacy and Chemistry of the American Medical Association, many manufacturers have found it unprofitable to introduce their wares by sending samples to individual members of the profession. Even the most gullible have had their eyes opened by noting how they were made the means of enriching unscrupulous manufacturers. The way certain "headache tablets" purveyors induced medical men to prescribe their attractively gotten up packages of coal tar derivatives has perhaps been most conducive to this eye-opening process. With the weeding out of the most objectionable "medicaments" and the cheaper detail men, has come a more gentlemanly set of distributors who, in most instances, have samples which, at least in part, conform to the standards set by the council. The cost of this distribution has therefore mounted until today, we are creditably informed, the manufacturers pay a minimum of 50 cents for every physician visited.

The desirability of a fifth or hospital interne year before granting the young physician a certificate to practice has not recently been questioned.

Argosy and Quest!
Old dreams remembered to be dreamed and done!
It is young air we breathe. This is the West!
—R. C. M., in the Century.

Editorial

WE BOW.

WE should prefer to write this paragraph a year from now. It is, however, characteristic of democracy and Americanism to demand in advance the declaration of a platform.

It will be the first purpose of the *Lancet-Clinic* to serve the interests of the general man in medicine and surgery. While territorially it will appeal chiefly to those of our profession who labor in the Middle West, our purposes, if they succeed, must shortly interest those who labor beyond our immediate precincts. The *Lancet-Clinic* was for decades a national institution, not because it willed to be, but because it had a message.

There lies a tremendous distance between the discoverers of physical and biological laws that bear upon medicine and the men who attempt to use these laws intelligently at the bedside. So little relation exists between those who work, for example, to establish the laws of optics in a laboratory and the group that daily must fit glasses to aching eyes; so little between the men who write essays on pharmacodynamics and those who give pills to the fevered. Many of our profession maintain that these extremes can never meet. There even exists a type of snobbishness which holds that they ought not to meet. These are views to which the *Lancet-Clinic* can not subscribe. A distinguished teacher once said that it was not enough to discover in science; no good was attained until the discoverer or someone for him had also created an audience through which the body politic was affected. It will be a main purpose with us to aid in thus transcribing the words of the soothsayers of medicine into the language of the people.

IF in thus making intelligible to each other the labors of chemist, physiologist and pathologist, and those of physician, surgeon and obstetrician, we contribute also to a better personal sympathy between them, we shall not be sorry. There seems lacking to-day a proper appreciation between those who are alleged to know most about the scientific problems of medicine and surgery, and those to whom come directly the everyday appeals for relief from human suffering. The reasons for this are, of course, obvious. What is already available in scientific thought and what are the difficulties incident to discovery in such fundamental subjects as physiology, pathology and bacteriology, have been and are but little understood by those who must meet daily the cry for what will nourish an infant, remove a tumor or treat a scarlet fever. On the other hand, the pressure engendered upon the practical man in medicine by human need, the weight of which has bred in him the impatience for answer which the cloistered worker in the sciences fundamental to medicine is too often unable to give, has not always been fully understood by the latter.

The *Lancet-Clinic* will try to keep in mind the complexity of the fabric which constitutes medicine. So far as it can it will point out what threads are best and strongest in the product. But as it attempts to judge quality in output it is also likely to judge quality in workmen. The *Lancet-Clinic* does not believe that circumstances alone have made renowned surgeons of some and bunglers of others. Neither is it sympathetic with the idea that a blindness secured through too close contemplation of the candle light of one of the specialties is conducive to the best possible mental state through which medicine as a whole may be viewed.

IT is our view that the doctor is—although the fact is not yet generally recognized—the greatest of the influences active in our democracy for the protection of its medical, social and economic interests. His importance under the first of these headings has always been granted. His value under the second is equally apparent when his knowledge of the intimate aspects of each man's life is considered. Since the possibilities of meeting the economic problems of life depend upon the maintenance of health and a knowledge of how that which is earned may be converted into the means of life and the means of acquiring happiness, the importance of the doctor under the third heading also comes to light.

These views may serve to explain why articles and comment will appear in these pages which, to the casual or unthinking, seem not at all related to medicine. It will explain, too, why we shall encourage a larger interest of the doctor in social and socializing problems, than is at pres-

ent represented by underpaid district physicians, county doctors, poorhouse superintendents, *ex parte* experts and coroners. It is idle for the doctor to join in the prattle regarding democracy while remaining the cocoon of our civilization.

OSBORNE.

NOT many months ago column after column of newspaper front-page brought a detailed list of the "charges" which had been preferred against THOMAS MOTT OSBORNE, whose courageous attempts to change obvious defects in our present prison system had disturbed the coma of public institution control in New York State.

A paragraph announcing his acquittal lately is buried on the fifth page of the journals which chronicle our daily doings. We have failed, so far, to discover even one attempt to make public acknowledgement of the injustice that has been done this man, although we trust that many such may be forthcoming. OSBORNE was, among other things, accused of "permitting" such behavior in prison as has been the despair of every thinking individual who has ever been custodian of the captive, the weak-minded, or the insane. To those who aided in making the incidents of ordinary life in OSBORNE'S case look sinister, we commend a careful study *of* GALSWORTHY'S "Justice." In the story of Auburn Prison and of OSBORNE during these past months, there are, however, facts of greater import to the public than to OSBORNE himself, all important, at first blush, as these seem. For half a century those best able to think have felt that something in our prison system is wrong. That in its management we have made little progress is clearly enough indicated when it is remembered that whilst most things labelled "1830" have gone to the junk-pile, cell blocks carrying this hieroglyphic seem as modern as ever. We feel ourselves unable to judge whether the reform ideas of OSBORNE are sound or not, but that our present prison system is chiefly bad—on that all are agreed. We do not know whether the blow struck OSBORNE will crush his spirit as similar behavior has done for so many who at odd times have dared to think differently, but we hope not. We do know that the forces which rose against him are those which most effectively hinder the progress of democracy if, in fact, they do not threaten its very existence.

WOMEN SHELL MAKERS.

PERHAPS the most serious problem confronting the statesmen of belligerent nations is that of how best to conserve the health of the women. That the physical well-being of women has already been seriously impaired is tacitly ackonwledged by the effort made to overcome at least partially the ill-effects of long hours in the shell factories. How can a sound mind belong to a sound body when both are racked beyond endurance? How can the moral nature be controlled when there is aberration of mind due to constant drain on the nervous energy? When women are compelled to work continuously from Friday morning until Saturday noon, with only a slight break for a hurried lunch, the disastrous consequences to women can be imagined. That young girls are collapsing under the strain, occasionally leaks through the cordon of censorship.

CLEAN ADVERTISING.

IN congratulating the New York *Evening Telegram* for its determination to decline publication of advertisements of medical "specialists," the *Bulletin* of the New York Department of Health is doing great service to the cause of decency in promulgating the facts among its thousands of readers in the medical profession. The columns of the medical man's favorite scientific journals should likewise be cleansed of the near-quack advertisements that disgrace them. When the lay press discovers it necessary to decline objectionable advertising through force of public opinion, the physicians should find it comparatively easy to make the publishers of medical journals realize that the best way to retain their subscriptions is by purging their journals of everything objectionable in the advertising line. And right now is the time to begin.

Correspondence

MEDICAL PREPAREDNESS.

AT this time, when the subject of preparedness is in the air, the occasion is opportune to invite discussion of the needs of the army's medical department. The following open letter invites the co-operation of those physicians of Cincinnati who are interested in this subject:

To the Physicians of Cincinnati:

The Medical Department is the only branch of military service to which the laity are not eligible for commission. It is, therefore, most fitting for that profession which is exclusively eligible, to advocate and assist in the specific purpose of medical preparedness along with the fortunate and nation-wide awakening to the necesity for preparedness against war.

Many of the younger physicians with this idea in view, have repeatedly expressed a desire for opportunity to familiarize themselves with medico-military duties that may at some time devolve upon them. We have devised a plan which is thought will give the opportunity in a form acceptable to those who are not in a position to sacrifice a great deal of time and expense. This plan has already taken form in the organization of the "Chapter for Medical Preparedness" of the University Medical Society, to which all physicians who are not over thirty-five years of age are not only eligible but heartily welcome.

We propose to meet twice monthly and familiarize ourselves by lectures and demonstration with the organization and duties of the medical department of the army; its administration in the field and especially during combat; its property and the method of handling it; camp sanitation; mess management; map reading and visibility problems, etc., which will prepare us to work out assumed problems in sanitary tactics, the proper solution of which at some future time may be spelled in terms of life conservation.

These meetings will prepare us for a five days' camp to be conducted just as during field service, where knowledge acquired may be practically applied.

The expense entailed will be merely the obligation to co-operate faithfully by attendance and application to the course offered, plus the cost of board during camp, which will be about one dollar per day.

We feel that your entrance into this movement will help both you and it.

DR. JAMES M. BENTLEY,
DR. ERIC A. FENNEL,
DR. JOHN D. SPELMAN, Secretary,
Committee.

New Books

HOW TO LIVE. RULES FOR HEALTHFUL LIVING BASED ON MODERN SCIENCE. By IRVING FISHER, Professor of Politcal Economy, Yale University, and EUGENE LYMAN FISK, M.D., Director of Hygiene of the Institute. Authorized by and prepared in collaboration with the Life Extension Institute, incorporated. Octavo, xix; 345 pages, with numerous charts and plates. Funk and Wagnalls Company, New York and London, 1915.

THIS interesting little volume comes to fill a long felt want in English medica lliterature intended for public consumption. It brings a series of rules for living which embody the best thought of modern scientific investigation and in a form which renders them intelligible to the average reader interested in the maintenance of his own health, and hence that of the community about him as well. Its opening pages declare it to be free from any taint of that medievalism which has taught the human race too long to despise its own body. It frankly preaches and in splendidly idealistic fashion the importance of securing, of maintaining and of developing to the full the best kind of physical euipment for life in this world.

The volume shows the effects of having been carefully revised by a series of skilled thinkers in personal hygiene, discussing in easily understood terms even the most modern aspects of the physiology of air, food and exercise. In a chapter on poisons there are handled the practical problems of constipation, of low grade infection and of the physiological effects of alcohol and tobacco. Not only are the accepted truths of modern personal hygiene stated as such, but there is apparent everywhere an insistence that life be governed practically by these truths. Dogma in matters of individual opinion regarding particular fads in foods, clothing, sex education, etc., is agreeably absent. Questions of a debatable nature are not ignored, but their debatable element is frankly acknowledged.

Too great praise can not be given the idealistic tone present everywhere in the volume. In this way those critics are disarmed who too often maintain with justice that the mere maintenancce of physical fitness is, after all, barren in nature. Physiological functions are not virtues in themselves, but only as they are turned to account in making life more worth living for the individual and for the community as a whole.

It might be well in a forthcoming edition of this volume to introduce a larger number of figures to illustrate the meaning of certain portions of the text. The few charts and diagrams given are excellent, and might, to advantage, be multiplied. Illus-

trations which have made famous some of the volumes on hygiene and physiology intended for school children (as those of RITCHIE) are not too simple not to be of advantage if used in a volume of the kind before us.

Eleven plates, averaging some six portraits to the page, give pictures of various members in charge of different committees of the Life Extension Institute. Among them are found some of our best workers for the public health. This scheme of creating confidence in the printed word by thus connecting it through inference with the personal approval of such distinguished workers is certainly to be commended. Our constant attempt to bring about reform in matters medical and social through mass action has not always spelled success. A method which ties responsibility to an IRVING FISHER, a GRAHAM LUSK, a WM. C. GORGAS, a LAFAYETTE B. MENDEL, a HARVEY W. WILEY, is going to accomplish better results.

Would it be out of the way to suggest that to the present gallery, which consists so largely of public health administrators, there be added the portraits of a few of those who have established the principles upon which all health movements rest? It seems too little known, or to much forgotten, that THEOBALD SMITH in his work on Texas fever laid the foundation for the entire modern concept of the disease carrier; that WALTER REED is the real banisher of yellow fever from our country; that E. C. ROSENOW'S discoveries contain within themselves the real elements for an understanding of the causes of what, too long, have been regarded as the "degenerative" diseases.

It is worth while emphasizing that the senior author of this volume is not a medical man, but a political economist. To IRVING FISHER, to whom we are already indebted beyond the possibilities of repayment for his report on health conservation in the United States, we become indebted a second time through this volume. No thinking medical man will be able to resist asking why both of these volumes had to arise outside of the medical profession. We shall not essay to answer, but the fact is there.

MARTIN H. FISCHER.

TOBACCO LEAVES—A BOOK OF FACTS FOR SMOKERS. By W. A. BRENNAN. Department of Medical Sciences, The John Crerar Library. Price, $1.25. Published by George Banta Publishing Co., Wisconsin.

THIS book contains many interesting statistics pertaining to different varieties of tobacco as to their production, chemical composition and method of curing and manufactured products in the United States. Historical and general facts concerning cigars, cigarettes, chewing tobacco, and different kinds of pipes are detailed. It touches on the effects of tobacco on the human system. It is a treatise of interest to users of tobacco, wherein many ideas on the subject can be obtained without wading through larger works. J. H. E.

PRINCIPLES OF GENERAL PHYSIOLOGY. By WILLIAM MADDOCK BAYLISS, M.A., D.Sc., F.R.S., etc., Professor of General Physiology in University College, London. 6¼ x 9¾ inches, xx + 850 pages, with 259 illustrations.. Longmans, Green & Co., London and New York, 1915. $6.00.

ANY one who has read BAYLISS' "Nature of Enzyme Action," will be prepared for this absolutely new physiology. It is a book that differs entirely from the physiologies used in medical schools, which have been made the basis of our multiplying state examinations for the practice of medicine. This book is written to be read. It is a work that every physician who wishes to bring himself up to that standpoint in physiology that will make modern researches ni clinical medicine and pathology understandable, ought to have on his table for a year. He ought to read it intensely, chapter by chapter. for several months.

The book is distinctly human and very interesting. The author's personality stands out in every page. The prominence given to surface action, the colloidal state, and the permeability of membranes will switch many readers onto a new line of study of the most common clinical conditions. The author's views regarding nutrition catalysis, enzyme action, secretion, digestion, and immunity will put the reader upon a new plane of thought.

What the physiology is expected to contain, and what the physiology of five years ago did contain, is rightly left to the old text-books; respiration, circulation, and drug action are treated historically and as biochemical processes.

For the modern reader the eighty-three pages of selected bibliography are invaluable, in order to carry on to vital completion any one of the subjects begun in this book.

We make no pretense to having read completely a volume of this size, for it would require the leisure of months, but we have perused its most interesting chapters. This is the book of the year and the live physician can not afford to be without it. B. H.

Books Received

AUTOPLASTIC BONE SURGERY. By Charles Davidson, M.D., Professor of Surgery and Clinical Surgery, University of Illinois, College of Medicine; Fellow of the American College of Surgeons; Surgeon to Cook County Hospital and University Hospital, and Franklin D. Smith, M.D., Clinical Pathologist to University Hospital. V + 369 pages with 174 illustrations. Lea and Febiger, Philadelphia and New York, 1916.

CANCER OF THE STOMACH. A clinical study of 921 operatively and pathologically demonstrated cases, by Frank Smithies, M.D., Gastro-enterologist to Augustana Hospital, Chicago; formerly Gastro-enterologist to The Mayo Clinic, Rochester, Minn.; formerly Instructor in Internal Medicine and Demonstrator of Clinical Medicine in the University of Michigan, Ann Arbor; Fellow of the American Gastro-enterological Association, etc. With a chapter on "Surgical Treatment of Gastric Cancer," by Albert J. Ochsner, M.D., LL.D., F.R.C.S., Professor of Clinical Surgery in the School of Medicine of the University of Illinois; Surgeon-in-Chief to Augustana Hospital, Chicago; Consulting Surgeon to St. Mary's Hospital, Chicago; 552 pages with 106 illustrations. W. B. Saunders Company, Philadelphia and London, 1916. Cloth, $5.50 net; Half Morocco, $7.00 net.

CANDY MEDICATION. By Bernard Fantus, M.D., Professor of Pharmacology and Therapeutics, College of Medicine, University of Illinois, Chicago; 82 pages. C. V. Mosby Company, St. Louis, 1915. Price, $1.00.

DIAGNOSTIC METHODS. A Guide for History Taking, Making of Routine Physical Examinations and the Usual Laboratory Tests Necessary for Students in Clinical Pathology, Hospital Internes, and Practicing Physicians, by Herbert Thomas Brooks, A.B., M.D., Professor of Pathology, University of Tennessee, College of Medicine, Memphis, Tenn. Third edition, revised and rewritten; 96 pages. C. V. Mosby Company, St. Louis, 1916. Price, $1.00.

DIAGNOSTIC METHODS, Chemical, Bacteriological and Microscopical. A Text-Book for Students and Practitioners, by Ralph W. Webster, M.D., Ph.D. Assistant Professor of Pharmacological Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago; Director of Chicago Laboratory, Clinical and Analytical. Fifth Edition, Revised and Enlarged with 37 colored plates and 171 other illustrations. XXXVII + 758 pages. B. Blakiston's Son and Company, 1012 Walnut Street, Philadelphia. Large Octavo. Price, $4.50 net.

TREATISE ON FRACTURES. By John B. Roberts, A.M., M.D., F.A.C.S. Professor of Surgery in the Philadelphia Polyclinic and College for Graduates in Medicine; Sometime Chairman of Fracture Committee of American Surgical Association, etc.; Attending Surgeon to St. Joseph's, St. Mary's and St. Timothy's Hospitals; Associate in Surgery in the Philadelphia Polyclinic and College for Graduates in Medicine. XXV + 677 pages, large octavo, with 909 illustrations. J. B. Lippincott Company, Philadelphia and London. Price, $6.00.

In this column the Lancet-Clinic will bring a record of the post-mortem findings in patients coming from the various medical and surgical wards of the Cincinnati General Hospital. The reports are intended primarily not as records of unusual types of cases but to serve as a stimulus toward the better diagnosis and interpretation of illness as it comes daily to the general man in medicine and surgery.—The Editors.

The Autopsy Room

PAUL G. WOOLLEY, M.D.,
Director of the Pathologic Institute,
CINCINNATI.

CARCINOMA OF THE STOMACH.

L M., aged fifty-four years, was admitted to the Cincinnati General Hospital on February 12, 1916. He died the next day.

I. ABSTRACT OF CLINICAL HISTORY.

Complaint:

Erysipelas over face and right eye.
Ascites.
Enlargement of liver.
Discoloration of face—greenish-yellow.
General weakness.
Shortness of breath on exertion.

Family History:

Irrelevant.

Past History:

Denies ever having had any other disease than frequent sore throat; denies having had ordinary diseases of childhood. Six months ago developed a small ventral hernia, which appeared in the midline just above the umbilicus. Drank beer and whiskey in moderate amounts. Denies venereal infections.

Present Illness:

Eight months ago his condition became so aggravated that he was only able to work one or two days out of the week; two months ago, noticed a slight nodular enlargement of the abdomen in the region of the liver; three weeks later this enlargement became quite prominent and the patient was advised to go to hospital. Lost twenty pounds during last two months.

On January 5, 1916, was admitted to the medical service when the following notation was made:

Jaundice slight but diffuse. There is no pain connected with abdominal tumor which appears to be enormously enlarged and nodular, liver reaching to the level of umbilicus on right side, curving gradually to an inch above that level on left side. Stools very light and clay colored. Becomes short of breath on exertion.

On January 16, 1916, his condition improved to such a degree that he became restless, was given one day's leave of absence, but never returned. One week later was admitted to Good Samaritan Hospital, where he was a patient until February 12, when he was sent to this hospital and admitted to the dermatological service suffering with erysipelas.

Present State:

Well developed and well nourished male, aged fifty-one years. Temperature, 97° F.; pulse, 94; respiration, 20. Greenish-yellow discoloration of face and neck with reddish patches (erysipelas) on face and right eye. Pupils react to accommodation and light, regular and somewhat dilated; conjunctivæ, jaundiced; tongue coated, no tremors; teeth, poor and pyorrheic; cervical glands, shotty; veins of neck overfilled and distended. Chest—tendency to barrel-shape; supraclavicular space marked; musculature rather flabby. Lungs, the right axilla is flat (note), the right chest somewhat tympanitic. Left chest under clavicle is hyperresonant, the upper left and axilla tympanitic. The lower axilla and bases are impaired, otherwise resonance is apparently normal. Normal vesicular breathing. At right apex, breathing is tubular, otherwise inspiration is roughened and expiration prolonged. Heart sounds weak, no murmurs or thrills present. Apex beat not palpable. Abdomen markedly distended. Liver much enlarged and nodular; anterior surface covered with nodules varying in size. No tenderness. Knee jerks sluggish.

Clinical Diagnosis:

Carcinoma of the liver; erysipelas; ascites.

II. AUTOPSY PROTOCOL.

The body was that of a well-built, moderately emaciated, grey-haired man of perhaps between forty-five and fifty years of age. His height was 5 feet, 3 inches. The abdomen was filled with fluid so that it bulged in the flanks. There was a general jaundice of the body, which in the face gave almost a bronzed appearance. Rigor mortis was present in the legs and disappearing in the arms. Post-mortem lividity was extremely well marked, the livid areas being composed of very fine capillary cutaneous hemorrhages. The lividity affected the posterior half of the body, particularly the posterior surface of the arms, legs and head. The pupils were equal, the conjunctivæ jaundiced. The left upper eyelid was considerably swollen and about the edges of the eyelids on both sides there was a slight amount of dried secretion and some moderate excretion, as though there was present a defervescing conjunctivitis. The teeth and gums were in fair condition. A large nodular mass could be palpated through the abdominal wall, which seemed almost completely to fill the cavity above the umbilicus. The lower half of the thoracic region had an excoriated appearance. The finger nails were cyanotic. There was no peripheral edema. The peripheral lymph glands were slightly enlarged in the groins, and not appreciably enlarged elsewhere. The fluid in the abdominal cavity was bile-stained.

The subcutaneous fat was almost completely atrophic. The mass described as filling the upper part of the abdominal cavity, appeared, when the body was opened, to consist entirely of the liver, the lower border of which was 17 cm. below the ensiform, 13 cm. below the costal margin in the right mammillary line, and 12 cm. below the costal margin in the left mammillary line. The intestines and mesentery and omentum were edematous, but otherwise were apparently healthy.

The appendix was *in situ* and ran directly to the left over the brim of the pelvis.

When the thorax was opened the lungs did not collapse. There was some edema of the mediastinal tissues. In the left pleural cavity there was a small amount, about 150 c.c., of a cloudy jaundiced serous fluid. There were no left pleural adhesions. In the right pleural cavity there were old adhesions over the middle of the anterior and lateral surfaces of the upper lobe, otherwise the lung was free. There was no exudate.

There was a slight increase of pericardial fluid, which was bile-stained. The epicardium and pericardium were edematous. The mesenteric lymph glands were not enlarged.

Just at the hepatic flexure of the colon, between the colon, the tail of the pancreas and the spleen, and also attached to the stomach, was a mass of tissue, firm and nodular to the feel, evidently representing a mass of tumor tissue. The stomach was occupied in almost its complete cardiac half by a grossly polypoid thickened, mostly firm, though internally and superficially necrotic, mass of carcinoma which showed several areas of ulceration. The pyloric half of the stomach and duodenum were completely free. The regional lymph glands of the stomach were enlarged, firm, and evidently the seat of carcinomatous metastases. At one point, about half way between the pylorus and cardia, at the lowest point of the greater curvature, was an area where the neoplasm had penetrated the stomach wall and become adherent to the mass already described

as occupying the tail of the pancreas. Also, near the lesser curvature, about 3 or 4 cm. from the cardiac orifice, was another large area, measuring 6 cm. in its long diameter, where the growth had penetrated the stomach wall, over which, however, there were no adhesions. Dissection showed that the sigmoid was merely adherent to the tumor mass occupying the tail of the pancreas. The same was true of the spleen. The lymph glands of the hilum of the liver and along the portal vein were very large and filled with neoplastic tissue. The retro-peritoneal glands along the abdominal aorta were generally enlarged and filled with nodules of neoplasm. The abdominal aorta was generally dilated and its walls filled with calcareous plaques and areas of atheroma in the form of abscesses and ulcers. The iliacs were tortuous and sclerotic.

The liver weighed 6,700 grams and was formed almost completely by a mass of large and small tumor nodules. These ranged from pinpoint size to others 3 and 4 cm. in diameter, many of which were united to form large conglomerate masses as large as the palm of the hand. Scattered here and there between these nodules were occasional small, greyish patches ringed about by the green of bile-staining, and at many places the larger carcinomatous nodules were apparently softened internally. On cut section, there was very little to be seen of liver substance. There were conglomerate masses of firm and softened, sometimes gelatinous, tumor tissue, occasionally bile-stained. Some of the nodules were diffusely necrotic and not broken down.

The spleen was of normal size (160 grams), perhaps slightly large, considering the age of the patient; the capsule was apparently smooth but thickened, at places being almost cartilaginous. The pulp was of a deep reddish-brown, firm and fibrotic.

The right kidney (160 grams) was pale, edematous, the capsule stripped with ease, leaving a smooth surface. The relation between cortex and medulla was normal. The line of demarcation was well marked; the cortex was exceedingly pale and the glomeruli were not injected. The left kidney was similar in all respects to the right. The adrenals were cavitated.

The left lung (490 grams) was moderately voluminous and air-containing throughout. Upon its pleural surface were scattered small (2 to 3 mm. in size) juicy nodules, which did not involve the lung tissue, but apparently represented tumor metastases. These were particularly numerous in the lower lobe and upon the pleural surface between the upper and lower lobe. The lung tissue of the upper lobe showed nothing obviously abnormal, except a slight congestion. The lower lobe was well congested and very slightly edematous. The right lung (650 grams) showed an apical scar with some fibrosis. The lobes were voluminous, air-containing, crepitant throughout, the pleura for the most part was smooth, but there were scattered small tumor nodules similar to those described in the left lung. On section the lung tissue was juicy, moderately congested and, particularly in the upper lobe, moderately edematous. The bronchial lymph glands were not enlarged.

The right auricle contained a firm goose-fat clot which extended into the ventricle. The tricuspid and pulmonary valves were not unusual. The coronaries were slightly sclerotic, but not markedly so. The mitral and aortic valves were not abnormal. The myocardium was fibrotic and firm, especially the papillary muscles. Commencing above the aortic valve the aorta was diffusely dilated and its inner surface was distorted and marred by the large and small discrete and confluent areas of fatty degeneration, calcified plaques and atheromatous ulcers and abscesses. The process affected the great vessels to a less extent. The mouths of the coronaries were patent.

The pancreas was firm and for the most part showed nothing abnormal. At one point in the region of the tail of the pancreas was a single small nodule, which was apparently metastatic. The lymph glands above the pancreas were large, one of them measuring 3 ½ x 3½ x 2 cm. There were very numerous enlarged lymph glands, all of which were adherent but easily separated from the pancreas. Many of these were apparently secondarily infected; most of them were bile-stained.

Anatomic Diagnosis:

Carcinoma of the liver with metastases in the regional lymph glands, liver, retroperitoneal lymph glands and pleuræ; generalized arteriosclerosis; edema of the lungs; jaundice; ascites; pleural effusion; purulent conjunctivitis.

III. REMARKS.

It will be noticed that at the post-mortem no evidence of the erysipelas remained other than the slight evidence of conjunctivitis. It is very commonly true that the erysipelatous blush fades at the time of death and completely disappears.

The main interest in the case is attached to the massive metastatic involvement of the liver from a primary growth in the stomach. The secondary growths were so generally diffusely distributed that pressure was exerted both upon the portal vein and the bile ducts, with the result that ascites and jaundice were produced. The arterial and venous circulation of the extremities was not disturbed, and therefore no peripheral edema appeared.

Notes and News

LOCAL.

Professor Harris M. Benedict, of the University of Cincinnati, has recently published a study of "Senility in Plants." In the American Year Book, recently issued, a review of important publications in science describes Dr. Benedict's investigation as one of the twenty notable studies in botany during the last year.

Dr. Thomas M. Stewart has removed from the Union Central Building, Cincinnati, to Edgemoor Sanitarium, Oconomowoc, Wisconsin.

On the evening of April 4, there will be held at Memorial Hall, a joint meeting of the physicians, pharmacists, dentists, veterinary surgeons and medical and dental students of Hamilton County. The purpose will be to discuss by competent speakers the effect of the Harrison Anti-Narcotic Law after one year's trial.

The Academy of Medicine dues must be paid now to ensure enrollment in the roster of the Ohio State Medical Association.

In 1915 there were 3,366 cases of scarlet fever in Chicago with seventy-seven deaths. Those were the reported numbers; probably the real figures will be considerably larger.

Reading, Pa., is falling into line. In the future rummage sale goods must be disinfected.

The low pay which Uncle Sam gives to physicians and surgeons of the medical corps is the cause given for the small number of really competent young men who have entered his service.

The Rochelle (Illinois) Health Department has ruled that upon the termination of a case of measles the patient must be given a disinfecting bath and the sick room and contents be subject to a thorough scrubbing.

It is stated that the application of Dr. J. A. Smith, for membership in the Chattanooga Medical Society, was denied because his picture appeared in a daily paper in connection with an article about a free baby clinic.

OHIO

Grocery store proprietors of Akron have been cited before the health board of the city and told in unmistakable language that the practice of selling small quantities of gasoline and coal oil in milk bottles must be stopped.

Youngstown is noting a diminution in the reported cases of scarlet fever.

Hamilton's death rate of 11.3 is next to that of Massillon, which has the smallest death rate of any city in Ohio, according to figures published by the State Board of Health recently.

The Youngstown Chamber of Commerce in conjunction with the local board of health have succeeded in raising sufficient funds to build a hospital for infectious diseases in that city.

Rushylvania and Ridgeway, near Mt. Victory, are each in quest of a good physician. The two towns are some six miles apart in pleasant surroundings and filled with people possessed of fair means. There is also an opening in these towns for a good drug store and a druggist. A correspondent from these villages urges men interested to visit the towns as soon as possible.

GENERAL

Agents of the Internal Revenue Department at Indianapolis are reported to have unearthed a large number of forged prescriptions for narcotics.

Bakers and health authorities clashed in their views of the necessity for eliminating cellar bakeshops at a hearing before the Industrial Board of the Department of Labor and Industry, at Philadelphia. Denials were made that these cellar shops are responsible for deaths among bakers from tuberculosis. If the cellar bakeshops are eliminated, as proposed in the suggested law, the bakers say they will be driven out of business. The increasing number of deaths from tuberculosis have determined the health authorities to aim at eliminating these cellar shops.

To check the spread of smallpox and scarlet fever raging at Peoria, Ill., the city health department issued an order forbidding children under seventeen years of age to attend theaters.

An epidemic of typhoid fever of an extremely virulent type prevails in Milwaukee. Twenty deaths have thus far been reported.

There are other cities besides Cincinnati in which measles is epidemic. Albany, New York, is crying for help.

As an instance of what may be accomplished when parents co-operate, the Commissioner of Health of New York State cites the fact that in a small town in the State thirty-seven cases of whooping-cough have been reported within three months by families not employing a physician. The commissioner, therefore, insists that the parents of Buffalo also report

communicable diseases within their homes if a physician is not in attendance.

The insurance superintendent of Ohio has resumed the issuing of licenses to medical protective associations. The physicians of the State, therefore, are no longer unprotected. However, the Ohio Medical Association will give special attention to the subject at its annual meeting in Cleveland, May next.

Failure on the part of the acting health commissioner of Minneapolis, Minn., to order general vaccination at the Whittier school, following the last case of smallpox reported there, has aroused some of the parents who have children there. At a meeting of the health and hospital committee March 15, a committee of the parents asked the alderman to order the health commissioner to do so.

Orders are expected by militia officers in Rock Island, Ia., for the treatment with anti-typhoid vaccine of all members of the militia who were not immunized during last summer's tour of duty. The State health department is making a great effort to furnish at once the supply of vaccine asked for by the adjutant general. The entire national guard of the State is to be made immune.

Another year of delay in the erection of a tuberculosis hospital by Detroit is necessitated, apparently, by the action of the health committee of the common council in eliminating from the estimates the $500,000 designed for that purpose. The committee cut out the half-million because of the huge budget, Mayor Marx's insistence that the tax rate be kept down, and the fact that the sum must be raised by taxes instead of by bond issue.

A pure water supply for Milwaukee residents is the main issue in the present municipal campaign.

Sentiment for and against the system of health insurance proposed in a bill introduced by Senator Ogden L. Mills was so evenly balanced that the Senate Judiciary Committee, which gave a hearing on the measure, was unable to determine where the balance of favor lay. The bill would set up a system of insurance to be maintained by contributions from employees earning less than $100 a month, employers and the State.

The Oskaloosa, Iowa, Board of Health has extended the quarantine for scarlet fever from thirty-five to forty-two days.

Almost incredible conditions exist in the slums of Detroit, Mich. The health department of that city has found in a three-story structure, one hundred men and half a dozen women. In a small room with one window, sealed, were found seven beds where fifteen men sleep, one of whom is a young man in the final stages of tuberculosis. The owners of the place are to be prosecuted.

National Public Health Association, New Orleans, April 26 to May 3.

At a recent meeting of the Texas State Board of Medical Examiners, Dr. S. L. Scothorn, of Dallas, was elected president of that organization.

In Peoria, Ill., the city, county and volunteer phyicians have vaccinated 1,258 children since free vaccination was introduced ten days ago.

On March 18, the colored physicians of Indianapolis reorganized the Esculapian Society.

Special officers of the federal government, it is said, discovered wholesale smuggling of narcotic drugs into the Missouri penitentiary.

On March 23, the Chicago commissioner of health officially delegated to the Chicago Medical Society the right to select a new head for the municipal tuberculosis sanitarium.

Better Babies' Week will be celebrated in Chattanooga, Tenn., on April 16, 17 and 18. The mayor, health officer and other city officials, together with members of the Cosmos Club and other organizations of that city will at this time dedicate their new Children's Hospital and perfect an organization for the care of the poor children of the city. Dr. B. K. Rachford, Professor of Pediatrics of the University, will make the dedicatory address on April 18.

The United States Civil Service Commission announces an open competitive examination for assistant physicist (qualified in spectroscopy), for men only, on May 3, 1916, at the places mentioned in the list printed hereon. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Standards, Department of Commerce, Washington, D. C., at a salary ranging from $1,400 to $1,800 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The United States Civil Service Commission announces an open competitive examination for Chief Statistician for Vital Statistics, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of the Census, Department of Commerce, Washington, D. C., at a salary of $3,000 a year, and vacancies as they may occur in positions requiring similar qualifications, unless

it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The case of cerebro-spinal meningitis isolated at the municipal hospital at Johnston, Pa., is the only case in Pennsylvania, according to the last weekly bulletin of the United States Public Health Service.

The epidemic of variola now raging in Detroit is said to be due to a recent large influx of unvaccinated people. Most of these come from other cities and the rural districts where vaccination is not compulsory.

NECROLOGY.

Dr. C. S. Powell, aged fifty-nine years, Benson, Ariz., March 18.

Dr. Carlos Husk, Laredo, Texas.

Dr. J. W. Copeland, aged eighty years, Fetzerton, Tenn.

Dr. Nathan G. Bozeman, aged sixty years, New York City, March 17.

Dr. Thomas D. Churm, aged eighty-five years, Holly Grove, Ark., November 14.

Dr. Bernard Wolff, aged forty-eight years, Atlanta, Ga., March 14.

Dr. John Hertzler, aged eighty-eight years, Madison, Tenn., March 16.

Dr. Suzette Ehrmann Dunlevy, aged eighty-five years, New York City, March 25. She belonged to the noted Ehrmann family of physicians. Her father settled in Cincinnati and practiced here many years.

The Calendar

Academy of Medicine, April 3.

Elephantiasis of the External Genitalia, Dr. A. Ravogli.

Ricketts Research Laboratory, April 3.

Experiments and Demonstrations by Drs. Ricketts, Wilms and DeNeen.

West End Medical Society, April 11.

Osteomyelitis, Dr. W. D. Haines.

Tennessee State Medical Association, Knoxville, April 4 to 6.

American Medico-Psychological Association, New Orleans, April 4 to 7.

American Urological Association, St. Louis, April 17 to 19.

North Carolina State Medical Society, Durham, April 18.

The Lancet-Clinic

A Weekly Journal of Medicine and Surgery.

MARTIN H. FISCHER, M.D.
ANTHONY G. KREIDLER, M.D. } *Editors*

¶ *The advertising pages of the Lancet-Clinic conform to the Rules of the Council of Pharmacy of the Americal Medical Association.*

¶ *Manuscripts, books, et cetera should be addressed to The Editors of the Lancet-Clinic, General Hospital, Cincinnati. Business communications should be addressed to The Business Manager of the Lancet-Clinic, 648 Main Street, Cincinnati.*

¶ *Contributions are accepted for publication with the understanding that they are contributed solely to this journal. Manuscript should be typewritten and on one side of the sheet only. Photographs or drawings, when necessary to the text, must accompany the manuscript. Letters to the Editors on matters of medical or surgical interest will be welcomed. Anonymous communications are ignored.*

¶ *References to Articles in journals must give author, volume, page and year, thus: JOHN SMITH: Journal of Medicine,* **22,** *1471 (1916).*

¶ *References to Books must give author, title, edition (if not the first), page, city of publication and year, thus: JOHN SMITH, Operative Surgery in Borneo, Borneo, second edition, 52, London, 1916. Unless references follow these rules they are worthless and must be discarded.*

¶ *Do not abbreviate. The editors will do this for you because it must follow a uniform Style.*

¶ *Upon request 100 reprints are furnished free of charge. Additional copies are furnished at cost.*

Notice

Under the auspices of the Anti-Tuberculosis League, the Cincinnati Chamber of Commerce and the Council of Social Agencies, there will be an address on Tuesday, April 4, at 8:00 P. M., in the Gibson House, on "Compulsory Health Insurance" by John B. Andrews, secretary of the American Association for Labor Legislation.

As a bill covering this field will be introduced in the next Ohio Legislature, it behooves the members of the medical profession to take an interest in this discussion at as early a date as possible.

FOR RENT.—Three story brick building, 8 rooms, bath and toilet; hot air furnace. Race 1425. Suitable for physician or dentist. Apply to Ellermann & Parr, 826 Findlay Street.

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Tuition fee, $150 per annum. Special Courses Extra.

THE CINCINNATI GENERAL HOSPITAL (850 beds), the most complete and modern hospital in this country, and the Cincinnati Tuberculosis Sanitarium (350 beds), constitute the clinical school of the Medical College. The Good Samaritan Hospital, the German Deaconess Hospital, and Longview Hospital for the Insane, are also used for clinical instruction, aggregating over two thousand beds available for teaching purposes.

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TEN SCHOLARSHIPS of the value of $150.00 a year, each, for four years, and TEN POSITIONS AS ORDERLIES in the new hospital, with maintenance and $10.00 per month, are available for students.

For detailed information and catalogue, address the DEAN OF THE MEDICAL DEPARTMENT, UNIVERSITY OF CINCINNATI, Cincinnati, Ohio.

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The Lancet-Clinic

SATURDAY, APRIL 8, 1916.

Contents

Contributed Articles

WHY NOT A POLITICAL LABORATORY?

HENRY T. HUNT,
Ex-Mayor of Cincinnati.

MEN daily make progress toward truths by the scientific method, that is, by collecting the ascertainable facts, brooding over them, framing an hypothesis to fit them, and then testing this hypothesis in every method scepticism can suggest. When such hypotheses are believed to be sufficiently tested, they are made known to the world, and if sound, gradually become a part of the general knowledge of mankind and thus affect the thought and action of the race.

§ 1

This method is applied with success in all the sciences, in the trades and in business problems; in almost all the activities which make up civilization. Of late years chemists, astronomers, efficiency engineers, inventors, psychologists, and other delvers into the detritus for truth have applied the principles of organization and division of labor to their researches and have equipped themselves with all available apparatus and with corps of assistants skilled in technical processes valuable for the promotion of the main ends of their work. The great astronomers who ascertain from time to time the existence of stars and determine the modifications in existing theory made necessary by their discoveries, enjoy the help of mathematicians, photographers, engineers and other technicians who perform at their direction the mechanical portion of the work, leaving the master minds free to reflect on the results. The modern inventor is also provided with an organization which relieves him of the burden of necessary and delicate opera-

tions which require both high intelligence and skill, enabling him to apply pure creative thought without exhausting himself with acquiring technique already possessed by others and available for his use. It is thus, of course, that business, war, government itself is organized. All these agencies, except government, are usually equipped with research bureaus, which do not participate directly in the main effort, but, free of the distractions of conflict, apply themselves to the problems of increasing efficiency. Wars nowadays, as everybody knows, are won less by the general and the soldier than by the educator, the statesman, the economist and the chemist, who are equipped with all apparatus and assisted by every aid that thought and money can provide.

The nation is undoubtedly the most powerful agency for progress. The sum of the co-ordinated thought and labor of all of us, applied through the machinery of the nation, must be vastly greater than the energy of any part, *if the machinery is correctly designed.* Here is the opportunity for a political research bureau or laboratory to ascertain possible defects in the design and operation of our government machinery.

§ 2

Who will be bold enough to contend that our government now transmutes as well as it might, the energy of one hundred million Americans into action for their welfare and happiness? Are public officers invariably the men of the highest character in the community? Are they the men best equipped by education for the intricate and subtle processes of government and administration? If they are not, what is the reason? Is it because our nominating and elective machinery is defective? Is it because public service requires too great sacrifice to tempt the ablest and best educated? Is the fault in the ignorance or indifference of the people; and if so, is there any quicker remedy than the gradual elevation of the mass to a higher appreciation of the importance and difficulty of government? To the solution of these and similar problems might the labors of our political laboratory be directed.

Let this laboratory be established at one of our great universities and be placed under the control of a board of the ablest political thinkers in the country. Let it be provided with a corps of the keenest historical investigators and the most impartial observers, men trained in historical research and in journalism and politics; the first class to investigate the history of democracy from the earliest times, the other to amass and collect the facts as to our condition today. When sufficient testimony has been taken, let the board wrestle with it and formulate its recommendations for a program. When published as the deliberate conclusions of an able body of men who had devoted themselves to such a study, these recommendations would be discussed with great interest and would undoubtedly modify the political ideas of our countrymen, greatly to their advantage, and then bring about a mighty improvement in our actual efficiency and happiness.

That portion of the research work which will have to do with the ascertainment of the ideas controlling our political conduct and their operation, would seem of the highest importance and interest.

§ 3.

The fundamental maxim of our political philosophy seems to be that the political decision of majorities on personalities and policies is more to our taste than any other method of government.

Secondly, we seem to have determined that the decisions to be passed upon and the personalities to be preferred are best formulated and presented through political parties.

Assuming the soundness or at least the present impregnable position of these two foundations of our system, the board might nevertheless, inquire with profit into the elements which make up this decision, the psychology of the voter, his political philosophy, his ethics, what his opportunities may be to get the facts, how far they are discussed and considered, and the other multitudinous factors entering into the final decision at the ballot box.

§ 4.

Political parties are undoubtedly necessary machinery for the determinaton and performance of the will of majorities and it is generally assumed that all men may participate in their action and thus affect the determination of the issues and the personality of the candidates. It would be interesting and valuable to know what

fraction of the population does so participate, what factors cause these particular individuals or classes to be more or less active and how the quality of such persons might be modified, what price they expect for these labors, whethre their work is well or badly done, and the other facts relevant to the inquiry. Our new bureau might inquire whether the parties are democratic or oligarchic and by what motives the leaders are actuated, the effect of the legal control of political parties by primary laws whether active participation in party government is increasing or decreasing and what forces are causing the change.

The branch of the laboratory' work covering the struggles of men through the ages to govern themselves would engage some of our best minds and stimulate them to their most ardent efforts by the thought that the result of their researches would be applied to life. The brilliant democracies which have flowered in the past, Athens, Rome, Florence, must have met problems somewhat similar to ours; and by studying the causes of their decay, we may postpone our own.

THE following article by a distinguished chemist is not published as propaganda for or against preparedness, or for or against a protective tariff. It is a document of medical interest, not because what it says of explosives holds for all chemical industry, but because what is here said of chemical industry is true of all American industry. The solution of its problems is less obviously, to our minds, external than internal. Our economic diseases do not need more pap but more brains.

The Editors.

THE ARTS OF PEACE.

AN AMERICAN CHEMIST.

WE hear a great deal nowadays about preparedness, that our country is not in a position to meet successfully an attack from a foreign power, that our army and navy should be built up, etc. It has even been urged that we create a standing army of at least a million men, and that our navy be increased to equal, if not excel, that of any foreign power. We are constantly reminded that Germany has prepared for the present conflict for the last forty years and that if she had not thus followed the program of BISMARCK she would not have been able to make the great record she has in the last eighteen months.

As everyone knows, Germany has a tremendous army and during recent years has developed a great navy. If we analyze Germany's preparedness, we soon realize that she has striven under both these arms not only to build up great corps of trained men, but that she has also seen that even the largest armies and the largest navies are absolutely powerless if not supplied with necessary ammunition. An ultimate analysis of the situation shows, therefore, that the crux of preparedness consists in an ability to manufacture explosives of high quality and in tremendous quantities, and that this manufacture must be able to go on and in sufficient amount to meet all needs, even when war is actually in progress.

This being the case, let us consider what explosives are, whence they may be obtained, and why they are able to do what they do. Explosives are chemical compounds or mixtures of such, which, owing to their unstable chemical constitution, readily decompose into simpler bodies, in which process they set free enormous volumes of gases that exert tremendous pressure.

§ 1.

The essential element in all explosives is nitrogen. Generally speaking, an explosive body of more or less potency is formed whenever the chemical group NO_2 is introduced into any organic compound. The process is called "nitrating." When such nitrated organic compounds are ignited or detonated, the oxygen of the NO_2 group combines with the carbon atom of the organic body to which it was joined and nitrogen and oxygen is broken and the oxygen rushes over to unite with the carbon atom.

Petroleum bodies or paraffins are of such nature that they can not be nitrated directly in order to produce explosives. About six months ago, RITTMAN, a government employee, demonstrated that benzol and toluol could be made from petroleum. The newspapers immediately announced that now, through the RITTMAN

process, a way had been found to make unlimited quantities of dyes and explosives. It is true that RITTMAN did succeed in making benzol and toluol by heating petroleum vapors under pressure and thereby breaking up the paraffins into aromatic compounds, but to the present date the process remains of purely laboratory and not practical interest. Whether the process can be developed to fulfill the predictions made for it, remains to be seen.

Nitrogen is in itself the most inert of chemical elements, but when, through the expenditure of great energy, it is united to some other element and introduced into a molecule, this same energy is again set free when the element with which it was originally united is given a chance to combine with some other element. Nitrogen, as it were, wants to live alone. The celebrated chemist BERZELIUS once said that nitrogen is best recognized by the properties which it does not possess.

Nitrogen and carbon, therefore, represent the essential constituents of explosives. But, unlike most commodities, they can not be stored in large quantities, for the risk is too great. Even if storehouses for them could be provided, they would have to be built miles from any city or town. Their location would then be inconvenient in days of need. The only practical way out of the difficulty resides in the possibilities of being able to manufacture explosives in amounts equal to the rate of daily consumption, even when war is in progress.

§ 2.

In trying to meet this need, Germany realized that explosive works could not be built merely to stand idle during times of peace, for every factory, when idle, deteriorates rapidly. The question, therefore, resolved itself into the feasibility of encouraging industries manufacturing products for which there is a steady demand in times of peace, but which in times of war could have their equipment converted into explosive factories.

Germany possesses a system by which she obtains at all times expert advice from men who have distinguished themselves in their chosen lines of endeavor. These are appointed as her "Geheimräthe," that is to say, her privy-councilors, or secret advisors. The German government does not embark upon any new project before it has had the advice of these men, whose opinions are based upon a thorough and scientific investigation of the matter in hand. It is this method that has made her the most efficient nation in the world.

The dyestuff and the pharmaceutical industries—especially the former—were decided upon by these men as lending themselves most readily to the manufacture of explosives. The German government therefore made it a point to foster and encourage them. As a result of this care the dye industry of Germany has become one of its most profitable ones. It produced before the war 80 per cent. of the world's output in dyes, and declared dividends averaging 24 per cent. per year. The United States consumes only some 10 per cent. of Germany's output.

A sketch of the history of this industry gives an idea of its rapid growth, its influence upon commerce, and its value.

§ 3.

The modern dye industry started when W. H. PERKIN, an Englishman, obtained on August 20, 1858, a patent for the production of a dyestuff known as "PERKIN'S mauve," from anilin. The actual production of this dye was started in France, the French making use of the information contained in PERKIN'S patent specifications. Its manufacture soon spread to the industrial centers of all the world and many patents were obtained in different countries. Few of these proved commercially successful.

The production of mauve from anilin stimulated great activity in chemical research, so that soon many other dyes were produced from this substance. ZININ'S discovery that analin could be synthesized from benzol (a process still followed to this day) made possible the production of anilin dyes commercially and in large quantities.

In 1859, HOFMANN discovered magenta, so-named because in that year the Battle of Magenta was fought. HOFMANN did more, perhaps, than any other chemist to investigate the nature of dyestuffs and to determine their chemical composition. Due to his efforts primarily, England became the foremost country in the production of dyes.

In 1862, when the whole dye industry was still in infancy, HOFMANN wrote: "Instead of disbursing her annual millions for these substances

(dyes) England will, beyond question, at no distant day, become herself the greatest color-producing country in the world; nay, by the very strangest of revolutions, she may ere long send her coal-derived blues to indigo-growing India, her distilled crimson to cochineal producing Mexico, and her fossil substitutes for quercitron and safflower to China, Japan and the other countries whence these articles are now derived." HOFMANN'S forecast came true only in part. England had vast coal fields at her disposal and her metallurgical industries were becoming more important every day. Large quantities of coke were needed, and when it was found that the by-products of coal distillation could be worked up for dyestuffs and therefore had value, a great impetus was given to tar distillation. Through the combination, England soon outrivalved all other countries industrially. The tar distillation industry in England thrived and its output rose to be valued in the millions.

In the meantime, German industry was looking askance at the progress England was making. The German mind is particularly fitted for chemical research, as infinite patience and the faculty of minute and careful observation are necessary to carry on successfully this kind of work. Such men as CARO GRAEBE, LIEBERMAN, MISCHLER, and GRIESS, through their brilliant work, gave the dyestuff industry in Germany an impetus which placed it in the foremost rank of scientific achievement.

§ 4.

During the early seventies, ALFRED NOBLE, Swedish engineer, devoted his time to the study of explosives. Many facts regarding them, explosive-mixtures and detonators were known, but it remained for this able man to put the manufacture of explosives on a scientific footing. He was attracted to the work by observations he had made on the tremendous force that could be generated through the use of certain chemical bodies. It had previously proved exceedingly dangerous to use and to store large quantities of explosive chemicals, as it was not known when these substances would go off or what were the causes determining this. Study of the action of these bodies promised much fruit. It became the aim to stabilize their action and control their explosive force. Research soon showed that a number of substances which are the products of the distillation of coal and which were used in the dyestuff industries, served well in this connection. BISMARCK, who was very fond of the company of scientific men, learned to his delight (from these friends) the value of tar distillation products for the manufacture of ammunition. Having a far-seeing mind, it did not take him long to recognize that the nation having the ability to manufacture large quantities of high power explosives of greater force than could be manufactured by other nations, would have a tremendous advantage in times of war.

As is well known, the German universities are supported in great measure by the government, and as the dyestuff industry is an eminently scientific one, an intimate connection between these industries and the universities soon arose. It became the aim of the German government to foster the dyestuff industries to the point where in case of war, they could be converted into explosive factories large enough to take care of whatever demands a great war might create.

Let me emphasize again this enormous advantage to Germany, in fact, the necessity for her very existence, of harboring within her borders an industry which used the same raw products as an explosives industry, and of building this up to the utmost.

§ 5.

The consumption of dyestuffs in Germany proper is small, and owing to her size she could from the start never hope to become a large consumer herself. It was therefore necessary to build up a large foreign trade. To bring this about, special concessions in freight rates for export were granted and taxes were even remitted in order to help the general development. The spirit of scientific research was encouraged and special pensions for those men who had devoted a certain number of years to research were provided for. This made it possible to employ research chemists at exceedingly low salaries. Such advantages, with many others, helped Germany to develop her chemical industries beyond those of any other nation. It was soon found that, owing to the increased output of the chemical plants resulting from this encouragement, Germany was able to manufacture more cheaply than other nations, and that she was also able to produce products of higher quality than those made in other countries.

Manufacturers who use chemicals and dyestuffs must buy in the cheapest market, or they can not meet competition. Foreign nations soon found it was difficult for them to compete with Germany, and many an industry which was started in the United States was put out of business because of being undersold by German products. It was the combination of expert chemical skill, favorable conditions under which they could manufacture, the genius of expert business management and the minute study of detail that helped the Germans to work up a tremendous chemical trade and especially in dyestuffs. The existence of trade conventions known as Kartels, are of inestimable value in building up an industry. The Kartels recognize that competition carried to the extreme is the death of trade and not its life, as our government would have us believe. In Germany, therefore, it is legal to limit competition, to have price agreements and to pool profits. In other words, the entire German dyestuff trade acts like a single corporation and can fight to better advantage any number of individual companies acting independently, for independently our companies must act or else they are guilty of illegal practice and subject to punishment. Our laws in this respect, although presumably made to favor United States citizens, really work to their detriment.

§ 6.

The United States at one time held ten dyestuff factories. In 1883, the duty of fifty cents per pound on dyes was removed and there was substituted for it an *ad valorem* duty of 30 per cent. (which still exists). In spite of this 30 per cent. protection, all the dyestuff plants, with three exceptions, perished. These three had a hard time. One of them was started in Buffalo, in 1879, by a very wealthy man. For sixteen years, fresh capital was poured into it and not one cent of profit was taken out. Then a small percentage was paid on the money invested, but, even up to date, the company has not realized a yearly yield of 6 per cent. on its investment since the commencement of business.

Another company has been in existence since 1882, but has never made money until this war broke out. This company manufactures ultramarine, the profits from which have enabled it to stay in business.

The third company could not stand the strain of German competition and sold out to a German firm in 1899, since which time it manufactures a few colors and uses its buildings as storehouses.

Nearly all dyestuffs of commercial importance were invented by Germans. The patent concession gave them a monopoly upon their inventions for fourteen years. The prices permitted to be charged for these patented dyes were so arranged that during the life of the patent the profits realized would repay the price paid for the original plant. At the expiration of a patent a plant costing at times as much as one million dollars would then be placed on the books as valued at one mark. Let me cite a concrete example. Auramine a yellow dyestuff of great beauty and strength, sold at an average price of $4.48 during the life of the patent. When the patent expired, the price in the United States became 48 cents, and any one who cared to manufacture it was free to do so. Did any one in the United States take it up? No, decidedly not. The American manufacturer would have been compelled to build a plant costing perhaps a million dollars. This would have meant an overhead expense on the plant of one hundred thousand dollars. The manufacturer would have been further handicapped by his lack of experience (which the German firm gathered in working the process fourteen years) and the chances are that it would take him several years before he would have been able to get the same great yields, or equally good ones, as compared with the German. The price of forty-eight cents was fixed upon by the Germans because they knew that there was no chance at this figure for the American to compete successfully in the manufacture of the product.

It was the usual habit of German dyestuff manufacturers, when they saw that a dyestuff was made successfully in the United States, to undersell in our market, when necessary, even at prices below the cost of production, and to continue doing this until the American manufacturer was forced to discontinue. As soon as he was out of the market, the prices would be raised, even to above that which originally ruled. What took place in the United States took place in other countries as well. The German government has thus, through the dyestuff manufacturers, pursued a relentless fight against other nations in their building up of a dye industry.

The activity of German dyestuff manufacturers has been so thorough that they induced certain of our own manufacturers, who needed dyes in their business, to exert their influence to keep the tariff as low as possible. The foreign manufacturers maintained that dyestuffs should be considered raw material, and that it was therefore to our own manufacturers' interest to keep the tariff low. Most of them accepted this narrow-sighted policy and did not wake up to the results of their action until the war broke out and they were cut off from their usual sources of supply. With the beginning of the war a million American workmen were thrown out of employment, for this number is employed in industries to which a continuous dyestuff supply is absolutely essential.

From what I have said you will understand the German government's interest in the development of huge dyestuff works.

§ 7.

Now, let us see what happened when the war broke out.

A general order was given in Germany that all dyestuff production should be discontinued at once and that the factories formerly interested in this should immediately follow the program which had been mapped out years ago, whereby every vat, every tank and kettle was to be rearranged, according to predetermined plans, and the manufacture of certain explosives commenced. A comprehensive plan for all this had been worked out in peace times, and so it was known to the pound just how much of the different explosives could be made in every factory that had previously made dyes. Moreover, all these factories had, of course, large supplies of crude material on hand—just as every factory doing a large business must have—all of which could now be worked up into some form of explosive. It is readily seen what a tremendous advantage Germany had in this ability to convert at almost a moment's notice great plants into explosive factories capable of large output.

Benzol and toluol are the chief raw products of the explosive industry and are derived solely from the distillation of coal. The German dyestuff manufacturers have agreements with the coke-oven men for these supplies and the government determines the quantity of benzol and toluol which is to be carried in stock, its method of storage and its location. If the coke-oven men do not live up to their contracts the government steps in (through its general staff) and sees that they do. It also controls the output, and in times of war requisitions the ovens and determines for what purposes benzol and toluol may be used.

These two products constitute perhaps the best needed for the manufacture of explosives, but other raw products are also of great importance. Almost any organic body containing a hydrogen atom or atoms which may be replaced by the nitro-group can be converted into an explosive. Glycerin, starch, certain types of sugar, cotton and many other substances may be used in this way. To be of value as raw material for the manufacture of explosives, almost unlimited quantities must be available. Glycerin and cotton, in ordinary times, answer this requirement, but since the war both have been declared contraband, with the result that they have become scarce in Germany. Glycerin has been used for years for the manufacture of nitro-glycerin, but cotton has come into use only recently for the manufacture of nitrocellulose, a very powerful explosive.

§ 8.

England always declared in favor of and insisted upon cotton being considered non-contraband, but she has changed her mind since the present conflict started and has insisted since that it should no longer be classed as non-contraband. This change of attitude has been severely criticized, but in passing judgment we must not forget that conditions have changed and that cotton is now a raw product which may be used for the manufacture of explosives. Germany recently made a proposal to the United States to send over a cargo of dyestuffs in return for a cargo of cotton. As England, through her fleet, has command of the seas, her consent to this was necessary. Diplomatic negotiations failed to bring it. Germany, however, was not greatly disturbed when the negotiations fell through. For some time past, German chemists, at the instigation of the general staff, have worked on substitutes for cotton and have discovered in wood pulp a product which, while not as good as nitrated cotton, still gives very satisfactory results. The available supply of

wood pulp in Germany has been requisitioned, and an order has been given to limit the size of all newspapers. An old newspaper has to be returned before a new one is issued. The price of wood pulp has risen since this order, and, in all probability wood pulp will shortly be declared contraband.

Glycerin is another product which, on account of its use in explosives, has become very scarce and expensive. The ruling price before the war was in the neighborhood of twelve cents per pound; now it is fifty-two cents a pound, and there is very little obtainable at this price.

§ 9.

Germany has also always striven to bring about conditions within her own confines which would enable her to have available at any time all the raw materials needed for explosives. As I have pointed out, nitrogen compounds are the basis of all explosives, and it is absolutely essential that unlimited supplies of nitrogen compounds be available. Germany met this problem by perfecting methods of obtaining nitrogen products from the nitrogen contained in the air. This work was also suggested and developed through the general staff.

Formerly Chili saltpeter was the basis of all nitrogen compounds, and as this salt could be obtained only from Chili, Germany realized the absolute importance of her becoming independent of all other nations in this essential product, without which she could not conduct a war of any duration.

To obtain nitrogen products from air, a source of cheap electric energy is essential. On looking over the ground, Germany found that the cheapest sources of electric energy lay in the waterfalls of Norway. She established in consequence large industries for making nitrogen products there and then shipped these products to Germany. After the war began Germany realized that it would be impossible for her to obtain the nitrogen products which she was making in Norway, in consequence of which she immediately started six plants on the Rhine. Here coal is coked and the distillates are used for making explosives, while the gas produced in the process of coking is used in gas engines, which in turn, are coupled to huge generators for making the electricity required for the manufacture of the nitrogen compounds necessary for the explosives out of the nitrogen in the air. At one stroke, therefore, she obtains not only her distillates, such as benzol and toluol, but also the nitric acid which is used for nitrating these products to make the smokeless powder, the nitro-toluol, etc., which constitute the modern sinews of war.

When the army of occupation entered Belgium, over one hundred experienced coke-oven men were taken along to operate the coke ovens of the captured country, so that the benzol and toluol obtained as by-products from these could be properly made and sent to Germany for the manufacture there of explosives. SOLVAY, the Belgian, who perhaps has done more than any other one man to discover methods for the recovery of the by-products of coal distillates, was seized by the Germans and held as a hostage.

From what I have said, you will see that the prepardness program of Germany is a comprehensive one. It may perhaps teach us also how important, if not absolutely essential, is the development of chemical industries in the United States if she is ever to be prepared to meet a foreign foe.

§ 10.

Germany with her large guns capable of throwing a projectile twenty-six miles would be powerless before an enemy if these guns were without the propelling power which is supplied by means of explosives. As a *sine qua non* of preparedness alone, were there no other reasons for it, the United States should begin to develop her chemical industries. How she can best do this will require much thought and study. Our chemical industries, which have never amounted to much until this war, need to be encouraged and the government must in some way devise means for the production of all the explosives that may be necessary within her own boundaries. The training of men for the army and navy is but the smallest part of a program of preparedness. The building up of a chemical industry which can supply the wants of an army and navy in case of war is a far more difficult one.

Germany has, at the present time, over four hundred million dollars invested in her dyestuff industries. In the United States about three millions were thus invested before the war. These

and similar facts make it easy to see that unless the government lends a hand it will be impossible for the United States dyestuff industries with their three millions of capital, to compete with the four hundred millions of Germany. Years of experience have, moreover, given German manufacturers a tremendous advantage over us. It will take much ingenuity and more hard work on our part to equal their outputs in quantity, quality, or price. The matter of differences between wages in Germany and in the United States will not be the great item, but the other things of which I have written will.

If preparedness is to be taken seriously, the United States needs to study the subject from angles which she has thus far ignored.

THE PHYSICAL AND BIOLOGICAL ASPECTS OF PHENOLSULPHONEPHTHALEIN DIFFUSION.*

(A Preliminary Note.)

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CINCINNATI.

SINCE 1910, numerous articles have appeared, in journals, entitled "The Phenolsulphonephthalein Test for Estimating Renal Function." This title (upheld by the methods of investigation) expresses the conclusion that the excretion of this drug is dependent entirely upon the kidney.

MARTIN H. FISCHER [2] has proved that the excretion of water from the body is not a function of the kidney alone, but one in which all the tissues of the body (that is, their hydrophilic or lyophilic colloids) are concerned, and that this secretion is influenced by the state of these colloids as determined, in large measure, by their acid content.

That the diffusion of phenolsulphonephthalein obeys the same rule, the following experiments prove.

Three test-tubes were prepared as follows:

(a) 3 c.c. sheep blood serum + 2 c.c. 0.8 per cent. NaCl solution, + 0.3 c.c. 0.6 per cent. aq. sol. phenolsulphonephthalein.

(b) 3 c.c. sheep blood serum + 1 c.c. 0.8 per cent. NaCl solution + 1 c.c. N/10 HCl + 0.3 c.c. 0.6 per cent. phenolsulphonephthalein.

(c) 3 c.c. sheep blood serum + 2 c.c. N/10 HCl + 0.3 c.c. 0.6 per cent. aq. sol. phenolsulphonephthalein.

As a check, three test-tubes were prepared as follows:

(e) 5 c.c. 0.8 per cent. NaCL solution + 0.3 c.c. 0.6 per cent. aq. sol. phenolsulphonephthalein.

(f) 4 c.c. 0.8 per cent. NaCl solution + 1 c.c. N/10 HCl + 0.3 c.c. 0.6 per cent. aq. sol. phenolsulphonephthalein.

(g) 3 c.c. 0.8 per cent. NaCl solution + 2 c.c. N/10 HCl + 0.3 c.c. 0.6 per cent. aq. sol. phenolsulphonephthalein.

After thoroughly mixing the contents of each, three cubic centimeters of each of the mixtures were placed in parlodion sacs prepared similarly to the celloidin sacs used by LEVY, ROWNTREE and MARRIOTT.[3] The sacs and contents were then submerged in 0.8 per cent. sodium chlorid solution until the levels of liquids within and without the tubes were the same. After fifteen minutes, the sacs were taken out and rinsed off with distilled water. The 0.8 per cent. sodium chlorid solution plus the rinse water was then made distinctly alkaline by the addition of 10 c.c. 10 per cent. sodium hydroxid, and the volume made up to 100 c.c. with distilled water.

Various shades of pink resulted dependent upon the amounts of phenolsulphonephthalein that had diffused into the salt solutions. The amounts of phenolsulphonephthalein were then determined quantitatively in a Duboscq colorimeter. The columns of liquid necessary to give the same depth of color measured as follows:

(a)—21 mm.	(b)—47 mm.	(c)—90 mm.
(e)—17 mm.	(f)—17 mm.	(g)—17 mm.

These figures show that as the acid content of a lyophilic colloid [the blood serum in (a) (b) (c)] is increased, there follows a proportionate retention of the dye which is expressed by a

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* Presented before the Cincinnati Research Society, April 6, 1916.

[1] From the Laboratory of Biochemistry in the Medical Department of the University of Cincinnati

[2] MARTIN H. FISCHER: Oedema and Nephritis, second edition, New York, 1915.

[3] LEVY, ROWNTREE and MARRIOTT: Arch. Int. Med. *16*, 389 (1915).

lessened diffusion of the dye out of the readily permeable parlodion sac.

Comparing (a) with (e) we see that in (a) we have about 80 per cent. as much dye as in (e). This is of interest, since the excretion of the dye in normal individuals in two hours is from 60 to 85 per cent. of the amount injected.

Further and more detailed work on this problem is in progress and will be published later.

The use of the parlodion sac (a lyophilic colloid to water) makes possible the study of the retaining power of the lyophilic colloids of the body as a whole, separate from that of the lyophilic colloids of the kidney itself, not only for the special case of this dye, but for the normal products of metabolism, which accumulate in the blood under certain conditions. A study of this problem is also under way.

Quotations

SCIENCE ON THE WAR PATH.*

[From the London *Financial News.*]

NO UNOFFICIAL war document thus far published can compare in importance with the manifesto issued on the subject of our national neglect of science. The signatories include many of the foremost scientific names of the day. The arguments are crushing in their conclusiveness. Best of all, if it is permissible, so to speak, the manifesto is issued at a time when we are face to face with the most lurid of object lessons. The bulk of our failures in the war have been a consequence of our neglect of that scientific energy, strenuousness and organization of which the Germans make so much. We believe their achievements in this field are exaggerated. At the same time they are far too obvious for us to remain undisturbed by them unless we mean to resign our ancient place in the world.

The signatories of the scientific manifesto point out that our highest ministers of state are mostly ignorant of the obvious facts and principles of "mechanics, chemistry, physics, biology, geography and geology." It will be noted that economics is not included, possibly because it is regarded as a department of biology. The same ignorance, as the scientists say, runs through the public departments of the civil service, and is nearly universal in the House of Commons. Its existence has been demonstrated by the announcement, on the part of a member of the government, that the possibility of making glycerine from lard was a recent discovery. Doubtless some other minister will shortly allude to the law of gravitation or to spectrum analysis as phenomena which have recently come within the cognizance of the government. The remedy for this state of affairs, in the opinion of the distinguished scientists, "is a great change in the education which is administered to the class from which public officials are drawn." Science should play a larger part in the civil servant's examinations, to the exclusion of Latin and Greek. "Eventually, the Board of Trade would be replaced by a Ministry of Science, Commerce and Industry, in full touch with the scientific knowledge of the moment." In those circumstances the manifesto goes on to say, with an optimism which is almost pathetic, "public opinion would compel the inclusion of great scientific discoverers and inventors as a matter of course in the Privy Council and their occupation in the service of the state." But if the Privy Council is to be filled up with scientific discoverers, how are party hacks and political schemers to be rewarded for their sycophantic services where they can not afford to pay the price for a knighthood or a peerage?

About the peremptory necessity of better scientific organization on national lines there can be no two opinions. It is not only a question of our prosperity, but of our existence. The law of the survival of the fittest works just as inexorably among nations as it does among individuals. We can be the fittest if we like. Unless we *do* like we shall not survive. But if we are to tackle seriously this problem of scientific reorganization, we shall have to scrap the whole of our rotten and antiquated political machinery. The scientific mind and temper can not possibly flourish in an atmosphere of political trickery, nepotism and plunder, such as that which has surrounded us for the last few centuries. For instance, what is the first characteristic of the true scientific spirit? Surely, the desire to ascertain the whole of the facts, and then to pass an unbiased judgment upon them. The true scientist, secure of his data, will follow his intellect whithersoever it leads him. But these principles are reversed under the House of Commons. In what should be the assemblage of the best national intellect there is no place for intellect at all. No private member of the House of Commons is allowed to pass an independent judgment on facts, scientific or otherwise. Before the data are submitted to him he is told what his opinion must be. If he can not quite make up his mind, he taps humbly at the door of the whip's office and is there told what he thinks. The greatest of all scientific achievements is possibly the Newtonian principle that every portion of matter attracts every other portion of matter in the universe with a force proportionate to the respective masses, and inversely as

* Quoted from a quotation in Science, *43*, 350 (1916).

the square of the distance. If, in normal times, the House of Commons were ordered by the whips of the predominant party to pass a resolution that Newton was wrong, and that "every atom of matter in the universe repels every other atom, conversely as the circle of the distance" (whatever that may mean), the members would file into the division lobby with their customary subservience. In normal political circumstances the House of Commons will pass anything, no matter how mischievous or ludicrous, if it is ordered so to do.

When the national sovereignty is in the hands of such an assemblage of unintellectual automatons as that, he who anticipates legislative sympathy with scientific achievement might with equal prospect of satisfaction hope to taste green cheese from the moon.

Very much the same may be said of the civil servants. All the highest posts are filled by private "influence." They go to the ex-private secretaries of ministers and to the sons, sons-in-law, brothers-in-law, nephews, cousins and other relatives of the men who are already "bosses" in the various departments. Talent and distinction are boycotted. Suppose the greatest of scientific discoverers—a Darwin or a Wallace—to be in rivalry as candidate for a high position in the civil service with some young ass who happened to be the intended son-in-law of a minister or "commissioner." The scientist might as well retire from the contest. The young ass would get the position and a few thousand a year with it. If he were hopelessly unable to discharge the duties, a competent deputy would be engaged at the expense of the taxpayers. That system fills the civil service with the offscourings of incapacity. Years ago Sir Charles Trevelyan said:

> There is a general tendency to look to the public establishments as a means of securing a maintenance for young men who have no chance of success in the open competitions of the legal, medical and mercantile professions . . . the dregs of all other professions are attracted towards the public service as to a secure asylum.

Thanks to this wicked system, it was recently announced that no less than five masterships of the High Court had been bestowed by "influence" on the sons of judges, to the exclusion of hundreds of better-qualified men who, unfortunately, had not been fathered from the bench. When the administration of justice is itself tainted with nepotism, and when the dregs of every profession are appointed to the highest positions in the public service as a result of private "influence," we have a long way to go before scientific achievement, no matter how distinguished and beneficial, will count for much in this country.

There are, however, some encouraging signs. The political truce is opening the eyes of the public to the stupidity of allowing the British Empire to be run in the interests of political schemers and lazy bureaucrats. Three or four years ago it was a common belief that our insane party system was an essential of effective government. That delusion is gone forever. We are now beginning to understand that an empire is run on precisely the same lines as a great business. The partners of a great commercial undertaking would not tolerate the presence among them of a man who, like a politician, announced his opposition to proposals before he knew what they were or who, like a bureaucrat, was incessantly plotting for his own hand and pocket against the interests of the partnership. True science and politics are incompatible. They can not exist together any more than the eagle and the squid can share the same apartment. Science has at this moment the most magnificent opportunity that it has ever enjoyed of seizing the steersmanship of human destiny. Every man who wants to see his country great, progressive and prosperous, marching as a standard bearer at the head of the advancing legions of mankind, should back the scientists with every ounce of energy that he possesses. If, otherwise, he wishes to see her mean, petty, retrogressive, squalid and contemptible, let him support a return to our debasing party strifes, with their concomitant triumph of the political schemer and all the host of parasites whom he enriches out of public money.

The aid of medical men should be enlisted in a fight against the posting of quack advertisements in the public comfort stations found for the most part in our country in the rear of saloons. The stuff glaring at men offering "a sure cure in five days," etc., is really nauseating. The German correspondent of the *Journal of the American Medical Association* relates how this evil was met in Berlin where, on the request of the Berlin Medical Society, the police department ordered the removal from public comfort stations of all advertising matter relating to the treatment of venereal disease. Surely, we can do as much in this country.

If the great armies now fighting in Europe had been in the field twenty years ago, typhoid fever would have caused as many fatalities as wounds, is the opinion of Surgeon General Gorgas.

Editorial

WAR AND PEACE.

THE EDITORIAL office presents a divided front so far as preparation for war is concerned. Half of it can not see how a European preparedness, which is alleged to have precipitated war, can, under the American flag, prevent war. The other half believes that no degree of American preparedness can ever be excessive or dangerous.

On one point, however, the office is a unit. There can be no preparedness for war where there does not exist beforehand a preparedness for peace. Inability in stressless times to meet the problems of health maintenance, of jobs, of wages, of tenements, of tariff, of cries for justice and a thousand other questions, can not, when war stalks, be converted at will into the ability to meet all these plus those added by war. Whatever, in the minds of different ones of us, we consider the avoidability or non-avoidability of war, of its alleged advantages or disadvantages, certain it is that there exists, to the intelligent at least, a surfeit of problems to be settled in times of peace which challenge the imagination quite as sharply as do the emergency problems of war. As long as there exists preventable disease, as long as there lie unused latent possibilities for the attainment of happiness, as long as there are jails, hospitals and insane asylums filled with the victims of controllable circumstances, as long as cities are over-crowded and vast acreages go unoccupied, as long as rivers run to waste, as long as men do not understand each other and justice is rare, just so long may the intelligent thinker among his fellows find a task fitted to his strength in the problems of peace alone.

We publish this week three articles which, in the narrower sense of the word, are not medical. We hold them in order because we adhere to the idea that the medical man, as first custodian of the health and happiness of the people with whom he works, must think and feel beyond those narrower confines which are more readily acknowledged as of medical import. The first of these articles is from the pen of a man long interested in the problems of his fellow; the second from that of a distinguished American chemist. For personal reasons he wishes his name omitted from the article. Lest it be thought that this article is prejudicially colored, it may be added that his interests are intensely American. The third article is a quotation. To make its purpose clear we suggest substituting words like "State legislators and congressmen" for "commoners;" and the names of State capitols and the houses of congress for the "House of Commons." The occasion to take stock, to get expert opinion on methods to meet a problem, is not found in the disordered times of war, but in the piping times of peace.

KENT AND TUBERCULOSIS.

SOMEBODY remarked last winter that Congress held representatives of six parties—regular Republicans, old-line Democrats, progressive Republicans, new-school Democrats, Socialists, and WILLIAM E. KENT. KENT it was who, early in the nineties, held that brand of municipal stock in the aldermanic councils of Chicago which could not be sold for three cents, while "the boys" held some for which thousands were bid. After a fight which brought at least semblance of order into the Chicago camp, he moved to California. Three years ago his neighbors there felt that he could best represent them in Congress and sent him there. His valuelessness to the machinists of politics in his own State is indicated by the fact that before he got back there they gerrymandered his district. His name even failed of being printed on the ticket of the new district which was to re-elect him. A thing which holds one's faith to Americanism and the American people made his new-found constituents write his name on the ballots, and in sufficient number to return him a second time to Washington.

The figure of WILLIAM KENT fits badly into the orthodox niches prepared for politicians. Like RODIN'S Burghers of Calais, he walks with the people in the market place. Last summer he advised his fellow citizens to establish a water supply of their own rather than keep on buying from the company in which he was himself heavily interested. His elements are those of statesmanship. We publish below a letter and the text of a national bill which he fathers, intended to bring rest to the unhappy itinerant who without friends and without adequate funds is urged from State to State until he dies. MR.

KENT's bill is expressive of that Federal way of looking at health problems which will shortly become more popular. If you feel that your representative does not on all occasions devote his first energies to those interests which concern a whole people, a note anent your feelings about MR. KENT's bill may help.

To the Medical Profession of the United States:

Herewith I enclose a bill practically identical with that which Senator NORRIS, of Nebraska, introduced in the United States Senate on January 6, 1916, and which I introduced in the House of Representatives.

This bill is the result of careful study and consultation, not only with leading medical men, but also with the Secretary of the Treasury and the Surgeon-General, Dr. RUPERT BLUE. The provisions are simple and obvious. One object of the bill is to standardize the treatment of tuberculosis by means of Federal assistance with the voluntary co-operation of the States. No one in the medical profession can doubt the wisdom of preventing the migration of indigent victims of tuberculosis, another object worthy of accomplishment. This migration is a hideous cruelty and is contrary to all recent developments of medical science as applied to this disease. It is universally recognized that, granted good outdoor air, rest, suitable nourishment, and cheerful surroundings, there is little choice in the matter of climate.

The theory that climate, unaided by nutrition, rest, and calmness of spirit, will cure this disease causes a continuing migration of physical and financial wrecks to regions where they are friendless and without possibility of employment of support, so that they become stranded under conditions that must necessarily lead to neglect, depression and resultant death. Moreover, these victims are frequently placed in public institutions which are unable to give proper treatment.

Wherever such neglected cases are found there are present most dangerous sources of infection. We do not permit the transportation of victims of smallpox, except under most careful conditions, and yet we have been oblivious of our duty to prevent the dissemination of this commonest and most serious of all human maladies.

The Federal Government can well afford to make the small contribution suggested toward the relief of the great class of citizens who would be benefitted by this bill, for it is now recognized that tuberculosis is peculiarly a disease of poverty and malnutrition, the control and eradication of which is in the province of the Federal Health Service.

You will note that by the terms of the bill it is optional whether the States accept the law and co-operate with the Federal Government, which obviates any criticism based on supposed Federal interference with the functions or rights of the States. You will also note that the States may pay, or cause to be paid, an amount at least equal to that to be contributed by the Federal Government. This means that any State tendering its co-operation can pay its proportion either directly from the State treasury or from any other source that it may levy upon, and that the State shall be responsible for the payment of the fund to any ageney which it may authorize, whether State, county, municipality, or private institution.

The bill is purposely free from technicalities, in order that latitude may be granted for the establishment of rules by the Surgeon-General. There is no medical man in the nation that more deservedly enjoys the confidence of our citizens. His record in fighting the bubonic plague in San Francisco and his subsequent career has fitted him to a remarkable degree for inaugurating this great work.

If you believe in the purpose of the bill and desire its enactment into law, I would respectfully suggest that you forward your indorsement of it to the senators from your State and to your representatives in Congress.

Yours truly,

WILLIAM KENT.

A BILL (H. R. 8352) to standardize the treatment of tuberculosis in the United States, to provide Federal aid in caring for indigent tuberculous persons, and for other purposes.

Be it enacted, etc., That within the appropriations made from time to time from such purposes the secretary of the treasury is hereby authorized to aid State authorities in providing care and treatment for indigent tuberculous persons who are citizens of the United States, but not legal residents of the States in which they are temporarily located, and for this purpose may designate such public or private hospitals and sanatoria as may be necessary. Prior to being designated to receive patients, and from time to time, said institutions shall be subject to inspection by officers of the Public Health Service, in order to determine the facilities and methods available and in use for care and treatment of patients, and the Secretary of the Treasury is further authorized to prescribe standards to which institutions shall conform in order to obtain the benefits of this act.

SEC. 2. That hospitals and sanatoria designated in accordance with the provisions of this act shall be entitled to and may receive from the Federal Treasury a subvention fixed annually by the Secretary of the Treasury, but not exceeding 75 cents per diem for each indigent patient admitted with the approval of

the Secretary of the Treasury: *Provided*, That the State in which said indigent tuberculous patient is admitted to a hospital or sanatorium for treatment shall pay or cause to be paid a subvention not less than paid by the Federal Government toward the cost of caring for such patient in said hospital or sanatorium. Subventions under this law will be granted only in the case of indigent patients who have submitted satisfactory evidence that they were not assisted by any person or institution to leave their legal residence or did not themselves leave in order to receive benefits under this act.

SEC. 3. That the Secretary of the Treasury is authorized to issue regulations governing the designation of institutions and establishment of standards and for otherwise carrying out the provisions of this act; and he is further authorized to collect and make available for general use information and descriptive matter relative to the construction, equipment, and maintenance of hospitals, sanatoria, and similar institutions.

SEC. 4. That detailed estimates of the sums required annually to carry out the provisions of this act shall be submitted hereafter in the annual Book of Estimates.

Current Discussion

BLUE SCLEROTICS AND FRAGILITAS OSSIUM.

AN INTERESTING communication from BIER'S Clinic, by WILLY HOFMANN,[1] calls attention to the relation existing between blue sclerotics and an abnormal disposition to fracture of the bones. Reference is made to the article of EDDOWES, who first called attention to it in 1900. Numerous instances are cited of the hereditary character of blue sclerotics descending through the female side.

H. BURROWS[2] cites a family tree of four generations consisting of twenty-nine individuals, thirteen of whom had blue sclerotics; of these thirteen, eight suffered fractures, and of these eight, seven had multiple fractures.

ADAIR-DIGHTON[3] reports four generations of blue sclerotics. Of fourteen individuals, nine had blue sclerae, and of these latter, five suffered fractures.

[1] WILLY HOFMANN: Archiv. f. Klin. Chir. *107*, 279 (1915).
[2] H. BURROWS: Brit. Med. Jour., *2*, 16 (1911).
[3] CHAS. A. ADAIR-DIGHTON: The Ophthalmoscope, *10*, 188 (London, 1912).

In an endeavor to explain a relation seemingly obscure, the author calls attention to similar conditions in both sclerae and bones, and emphasizes analogies in their embryonic derivations. Blue sclerae, he explains, are due to deficiencies in the development of the scleral connective tissue permitting a dark discoloration from the underlying choroid.

Embryologically considered, the sclera and the bones are both derived from the mesenchyme. The sclera develops from the mesenchyme, which insinuates itself between the lens and the surrounding ectoderm. from this same mesenchyme the whole osseous system is evolved. Comparative anatomy teaches that in many animals the sclera undergoes transformation into cartilage. The sclera of fishes is for the most part cartilaginous. Among the saurians (lizards, turtles, crocodiles), not only is the back part of the sclera cartilaginous, but there is a delicate ringlet of bone platelets. He concludes that these analogies in development render the simultaneous affection of sclera and osseous system comprehensible.

Having rejected syphilis as the probable underlying cause of both conditions, he concludes as follows:

1. There exists such a thing as a congenital and inheritable anomaly made up of a blue coloring of the sclera with abnormal fragility of the bones. Transmission occurs for the most part through the female members of the family.

2. The signs of the above mentioned malady consist in a peculiar bluish-grey coloring of the sclera, and a disposition to ready fracture of the bones following insignificant trauma.

3. The anomaly depends on a congenital inferiority in the mesenchyme derivatives. Histologically, there is a marked decrease in the connective tissue fibres of the sclera, which permits the underlying choroid to show through.

C. E. CALDWELL.

CLOQUET'S HERNIA.

FRIEDRICH KEMPF[1] reports a case of this interesting and unusual type of hernia. He is inclined to ascribe the cause, in this case at least, of the hernia penetrating the pectineal fascia to conditions found at operation. A large mass of inguinal glands was found occluding the saphenous opening and firmly ad-

herent to the pectineal fascia. In his opinion, this adherent mass of glands caused a divergence of what had begun as an ordinary crural hernia. The hernia finding its way blocked at the saphenous opening and, by reason of the inflammatory adhesion of the glands, prevented also from pushing upward over Poupart's ligament, had burrowed between the fibers of the pectineus fascia and the rather loosely arranged fibers of the muscle, to eventuate as a pectineal or CLOQUET'S hernia.

Having discussed the various theories of the origin of this type of hernia, among others those of KÖRTE and HARZBECKER, who regard the hernia as one due to anomalies of origin of the pectineal fascia on the one hand, and to a constant origin of the medial portion of the pectineal fascia from the inner part of Poupart's ligament on the other, KEMPF concludes that while these anatomical conditions may prove operative in some cases, at least in a number of cases inflammatory masses such as were present in his case may be considered to conduce to this variety of hernia by conversion of the ordinary type of crural hernia into the pectineal type.

VON O. HARZBECKER,[2] in the same issue of the Archiv, takes issue with KEMPF and shows that the method of attachment of the innermost part of the pectineal fascia to Poupart's ligament found in a large number of dissections, is when taken in conjunction wth an attenuated or lax condition of Gimbernat's ligament, enough to account for CLOQUET'S hernia.

C. E. CALDWELL.

[1] FREDERICH KEMPF: Archiv. f. Klin. Chir., *107*, 368 (1915).

[2] VON O. HARZBECKER: Archiv. f. Klin. Chir., *107*, 377 (1915.)

A sad commentary on the way medical men and women are still regarded by some manufacturers, a decade or so behind the times is the offer of a free bottle of a "tonic" to those who have a certificate from their local druggist that two such bottles have been prescribed to patients. Considering that such offers are received through the mail every week or two, the manufacturers must find it profitable. They dispense with the detail man, the advertising in "scientific" medical journals and the exhibits at medical meetings, by making the medical man act as agent, purveyor and testimonial manufacturer.

Books Received

INFANT FEEDING AND ALLIED TOPICS. For Physicians and Students. By HARRY LOWENBURG, A.M., M.D., Assistant Professor of Pediatrics, Medico-Chirurgical College of Philadelphia; Pediatrist to the Mt. Sinai Hospital, etc., XII + 382 pages. Illustrated with 64 text engravings and 30 original full-page plates, 11 of which are in colors. F. A. Davis Company, Philadelphia. 1915. Cloth, $3.00.

A HANDBOOK OF INFANT FEEDING. By LAWRENCE T. ROYSTER, M.D., Attending Physician, Bonney Home for Girls and Foundling Ward of the Norfolk Society for the Prevention of Cruelty to Children; Physician-in-Charge of King's Daughters' Visiting Nurse Clinic for Sick Babies, St. Louis. 12 mo. 144 pages, illustrated. C. V. Mosby Company, St. Louis. 1916. Cloth, $1.25.

INJURIES OF THE EYES, NOSE, THROAT AND EARS. By ANDREW MAITLAND RAMSAY, M.D., F.R.F.P.S. (Glasgow), Ophthalmic Surgeon, Royal Infirmary, Glasgow, Major R.A.M.C. (T. F.), J. DUNDAS GRANT, M.D., F.R.C.S. (Eng.), late Major R.A.M.C. (Post Office Rifle Volunteers); King George Hospital, London; Lord Knutford's Special Hospital for Officers; H. LAWSON WHALE, M.D. (Camb.), F.R.C.S. (Eng.), Captain R.A. M.C. (T.F.); formerly No. 13 General Hospital, British Expeditionary Force, overseas; the County of London War Hospital, Epsom, and CHARLES ERNEST WEST, F.R.C.S. (Eng.), Aural Surgeon to and Lecturer on Aural Surgery at St. Bartholomew's Hospital, Captain R.A.M.C. (T F.). 12 mo. 161 pages. Henry Frowde, and Hodder and Stoughton, London, 1915. Cloth. Price, 2 s. 6 d., net.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc., of interest to Students and Practitioners. Edited by H. R. M. LANDIS, M.D., with collaboration. Vol. I, Twenty-sixth Series, 1916. 8vo, X + 326 pages. J. B. Lippincott Company, Philadelphia and London. Price, $2.00.

A MANUAL OF PATHOLOGY. By GUTHRIE MCCONNELL, M.D., Assistant Surgeon, Medical Reserve Corps, U. S. N.; formerly Professor of Pathology and Bacteriology in the Philadelphia Dental College and in the Medical Department, Temple University, etc. Third edition, thoroughly revised. 12mo. 600 pages, illustrated. W. B. Saunders Company, Philadelphia and London, 1915. Cloth, $2.50, net.

HANDBOOK OF MASSAGE FOR BEGINNERS. By L. L. DESPARD, Member and Examiner, Incorporated Society of Trained Masseuses, XVI + 247 pages, octavo. Henry Frowde and Hodder and Stoughton, London. Oxford University Press, American Branch, New York. $2.00.

SOCIAL TRAVESTIES AND WHAT THEY COST. By D. T. ATKINSON, M.D. 152 pages, 12mo. Vail-Ballou Company, New York, 1916. Cloth, $1.00, net.

Societies and Academies

ACADEMY OF MEDICINE, CINCINNATI.

ON APRIL 3, DR. A. RAVOGLI discussed "Elephantiasis of the External Genitalia," illustrating the subject with excellent lantern slides. He entered deeply into the pathology, concluding that in the majority of instances the condition is preceded by either syphilitic or tuberculous ulcers. He reported a case in which the woman had phthisis pulmonalis, terminating in tuberculous peritonitis, from which she died. She had unmistakable evidences of syphilis. Elephantiasis of vulva was marked. DR. RAVOGLI spoke of ulcers due to mixed infection. He emphasized the fact that many cases of elephantiasis were preceded by profuse gummatous infiltration. Heavy scar tissue was common. The skin breaks down and stubborn ulcers result. Chronic hypertrophic lymphangitis ensues, producing elephantiasis. DR. RAVOGLI showed on the screen how the syphilitic process gives rise to lymph stasis and explained the succeeding steps in the production of elephantiasis.

As for treatment, DR. RAVOGLI had found arsenic of no avail. He achieved the best results from mild specific treatment: gray oil and tonics. External applications were of no benefit. To relieve irritation, a solution of bicarbonate of soda was grateful to the patient. A weak bichlorid solution had been used advantageously. Iodoform or bichlorid gauze locally had been employed. Ulcers have been curetted. Surgically, he advised the removal of as much as possible of the redundant growth. In men, amputation of the organ may be necessary. Occasionally skin grafting may be required.

DR. HEIDINGSFELD thought cases occur quite commonly. In regard to etiology, he concurred with the essayist. He believed stasis of the circulation, either lymphatic, arterial, or venous, was the prime factor in the production of elephantiasis of the genitalia, secondary edema resulting. He had seen the same secondary changes in erysipelas, however. He thought the underlying cause to be more than mere stasis. He was led to the conviction that secondary infection played a greater role in the production of elephantiasis of the genitalia than was usually assumed. Hence, it follows that keeping the surfaces clean with peroxide of hydrogen gets rid of any cocci regardless of their character.

DR. CRISLER reported four cases he had observed. DR. RICKETTS showed a photograph of a native of Samoa in which the redundant growth weighed eighty-two pounds. DRS. SCHOLTZ and BROEMAN also reported cases.

SOCIAL AGENCIES.

"COMPULSORY health insurance is necessary; it must be made obligatory if it is to succeed at all," said JOHN B. ANDREWS, of New York, the secretary of the American Association for Labor Legislation, at a Greater Cincinnati Conference at the Hotel Gibson, April 4. The meeting was held under the auspices of the Anti-Tuberculosis League, the Cincinnati Chamber of Commerce and the Council of Social Agencies. MR. ANDREWS presented a model bill for health insurance drafted by a committee from the American Association of Labor Legislation, and since introduced in several Eastern States. All manual workers and non-manual workers, such as clerks earning less than $1,200 a year, are embraced in the provisions of the bill. The benefits comprise free surgical and medical aid and necessary medicines. The nursing also is included. The maximum time in each year that these benefits may be exacted is twenty-six weeks, commencing with the fourth day of illness. The prospective mother is not excluded from the provisions of this health insurance; there is to be a maternity benefit for four weeks. MR. ANDREWS pointed out society's disregard at present for the needs of mothers who are frequently compelled to go into debt for the necessary obstetrical attention, and that self-respecting mothers begin work too soon after confinement.

The bill provides for funeral benefits not to exceed fifty dollars.

The expense of the health insurance is to be met by assessing the employee two-fifths of the amount, the employer two-fifths and the State one-fifth.

The speaker insisted on the necessity of making health insurance a paying investment. He said that since the employee's personal habits are often responsible for his sickness, it would be unjust to tax the employer with entire expense. The plan proposed of requiring employee, employer and State to pay in the proportion mentioned, he thought ideal. MR. ANDREWS said that the bill provides for a State insurance commission to supervise the work of local agencies. It is essentially the German plan of administration.

He assured the assembled physicians, labor leaders, social workers, health officials, insurance and business men that the bill would be introduced in the Ohio legislature when it assembled next January.

MR. ANDREWS then discussed a few objections. He met the question about the additional burdens on employers exacted by the proposed bill by saying that the entire cost would not exceed one per cent. of the pay roll. He said that organized labor in the East had objected to the physical examination of employees which the bill provides, as giving the employer an opportunity to throw workmen not en-

tirely up to the standard on the human scrap heap. He thought the objection a good one. 'But," he said, "health insurance is the most effective answer to this opposition. During the period of treatment the wage earner could get well while being paid for it."

He also mentioned the benefits accruing to the wage earner from this careful examination, in locating physical defects in their incipiency. This, with advice from the examining physician about following the laws of health, coupled with the knowledge that the wage earners would be immune from want, would insure a state of physical contentment and absence of fear and worry, which would go far to raise the standard of efficiency in the industrial world.

Mr. ANDREWS said so-called lodge doctors have been heard to dissent. Their opposition to the bill is, however, directed to minor administrative details. He thought that practically all medical interests in this country will support the measure, as is the case in Germany and England.

Mr. ANDREWS said, "The people of Ohio are more ripe for compulsory health insurance than elsewhere. The State Board of Health has already made a general health survey of the State. Besides, the excellent manner in which the Ohio Workmen's Compensation Act has been put into practice renders it quite easy for the new health insurance law to be accepted throughout the commonwealth. The movement is inevitable, and when the benefits which health insurance will bring to the industrial workers of your great State are observed, you will wonder why you have so long deferred the enactment of the law."

The subject was freely discussed at the conclusion of MR. ANDREWS' remarks.

DRUGGISTS-PHYSICIANS' CONFERENCE.

ON THE evening of April 4, the Academy of Medicine, The Ohio Valley Druggists' Association and the West End Medical Association, held a joint meeting at Memorial Hall to discuss the HARRISON Anti-Narcotic Law. Representative CHARLES HARDING, who presided, said that less than four per cent. of the physicians, pharmacists, dentists and veterinarians practicing here have been found to be ignorant or neglectful of the law. Mr. HARDING introduced District Attorney STUART R. BOLIN, of Columbus, Ohio, who spoke at length on the interpretation of the HARRISON law which has been in effect a little over a year, and the need for its enforcement. MR. BOLIN quoted varying estimates which placed the number of drug addicts in Ohio at 180,000, and also said that prior to the passage of the law there were preparations on the market which were responsible for the killing of more than 10,000 babies annually. MR. BOLIN said we hear much talk about *preparedness* in these days, and that the first step ought to be preparedness for national health, in order that fighters and mothers of future fighters should be as strong and healthy as God intended them to be. He urged the earnest co-operation of physicians and druggists in the fight to stop the illicit traffic in narcotic drugs in this district.

Mr. JOHN R. GANT, internal revenue agent, said: "Speaking by comparison, Cincinnati is one of the cleanest cities in the United States as far as the dispensing of narcotic drugs is concerned, and there is as high a class of druggists and physicians here as can be found anywhere." He stated that the South is more troubled from addicts of the drugs than this section of the country.

MR. A. C. GILLIGAN, internal revenue collector, said that his first duty was to see that every druggist, physician, veterinarian and dentist was registered. He estimated that only two per cent. of the physicians are violators of the law, and of that number one per cent. are addicts themselves. Mr. GILLIGAN said the department at Washington had been very lenient up to the present time, but that a stricter enforcement of the law was to be expected in the future.

At the close of these addresses, Mr. CHARLES EHLER answered a number of questions as to how and by whom narcotic drugs should be prescribed.

The Michigan Food Commissioner, after careful laboratory tests, has this to say of Tanlac, the widely advertised nostrum: "If anyone wants to be cured by the Tanlac route at one-fourth the expense, let him get a quart bottle of sherry wine. Then go to the druggist and get one and one-fourth drams of glycerin and two drams each of aloes, gentian, licorice and cascara. Mix and you will have Tanlac so closely resembling the commercial article that neither you nor the manufacturer can tell the difference. The formula will give four times the quantity found in an ordinary dollar bottle of Tanlac."

Tabulations just completed show that 2,189 cases of communicable diseases were reported to the New Jersey State Department of Health during the month of February.

If this country had to place an army of one million men in the field for active service, ten thousand medical officers would be required. The question arises, where could these be secured?

IN THIS *column the Lancet-Clinic will bring a record of the post-mortem findings in patients coming from the various medical and surgical wards of the Cincinnati General Hospital. The reports are intended primarily not as records of unusual types of cases but to serve as a stimulus toward the better diagnosis and interpretation of illness as it comes daily to the general man in medicine and surgery.— The Editors.*

The Autopsy Room

PAUL G. WOOLLEY, M.D.,
Director of the Pathologic Institute,
CINCINNATI.

ATROPHIC CIRRHOSIS.

R. K., aged seventy-five years was admitted to the Cincinnati General Hospital on February 22, 1916. She died March 6, 1916.

I. ABSTRACT OF CLINICAL HISTORY.

Complaint:

Large abdomen.

Family History:

Mother died at ninety-three of old age. Father died at eighty, of dropsy.

Past History:

Has been a very healthy woman. Has been very active up to the present illness. Had typhoid fever at twenty-two. Menopause twenty-five or thirty years ago. About twenty years ago she had a little swelling of the feet, but has had none since then.

Present Illness:

Patient had a cold with cough from the first of January to the first of February, but seemed to recover very well. At about this time, she noticed that the abdomen began to swell, then her legs also. For two weeks she has been unable to lie on her left side because of a feeling of weakness and palpitation. Has remained in bed only the last few days.

Present State:

Patient is a well preserved old woman. Pupils react to light and accommodation. Slight prominence of eyeballs. Tongue is clean. All of the teeth are missing. Throat negative. Chest well formed, symmetrical; there is edema of the wall in the lower part, especially on the right. Breath sounds are rather faint and there is some impaired resonance over the part of the chest where there is edema. Lungs: There are moist rales at the base on the right; a few rales on the left, otherwise left lung negative. Heart: apex is in the fifth space. Dullness extends four and a quarter inches to the left. Right border "not abnormal." Second sound at apex loud; aortic second sound accentuated; pulmonic second is accentuated. There is a blowing systolic murmur heard all over precordium. This murmur is also heard in the axilla. Pulse: Tension rather high. Arteries not thickened. Blood pressure: 180 systolic, 100 diastolic. Abdomen shows marked enlargement. There is edema of the abdominal wall. Fluctuation is present. No masses are felt. Knee jerks present. Marked edema of the legs. There is extreme prolapse of the uterus. There is abrasion of the cervix.

Urine: has no albumin, sugar, nor caste; many pus cells present.

February 24. Procidentia uteri very marked. Using the bed pan brings the uterus far outside. Patient is lying mostly on the right side. She was on an infusion of digitalis, half an ounce three times daily, from day of admission.

February 28. Patient much weaker. Pulse about 104. Abdomen tapped and nine and one-half quarts of turbid greenish fluid withdrawn. Patient's general condition improved after tapping. Pulse dropped to 64 during operation; was irregular; but fairly strong.

March 4. Patient's improvement not continued. Night after parancentesis, patient was very uncomfortable and has had some dyspnea since then. Pulse has remained irregular and digitalis was stopped March 1. After parancentesis patient's legs were smaller. Patient's urinary secretion has diminished in the last few days.

March 5. Patient has been in comatose condition since yesterday morning. Respirations slow and labored. Pulse fairly strong, but weaker this evening than it was this morning. Large bubbling rales are heard over chest. Heart sounds fairly strong.

Patient died at 12:10 A.M., March 6.

Patient's temperature 99.2° F., on admission; thereafter normal until March 1, when it became subnormal; between 96° and 98° F., until the day of death, when it rose to 99.4° F. Pulse 112 on admission, dropped to 84 within two days and at the end of five days it rose to 100. then dropped to between 50 and 75, rising again to 100 before death. Respirations between 20 and 30.

Clinical Diagnosis:

Chronic myocarditis; chronic interstitial nephritis; hypostatic pneumonia.

II. AUTOPSY PROTOCOL.

The body was that of a well built, fleshy old woman of about sixty years. The teeth were all missing. The pupils were both dilated. Height, five feet one inch. There was a general edema, most marked in the legs, and very distinct posterior lividity. The abdomen was filled, apparently, with fluid. There were lines of tension upon the abdominal surface. The breasts were atrophic and contained no nodules. Rigor mortis was present in the legs and slightly evident in the arms. The fingers and finger-nails were livid. About the nates the skin was excoriated and, in some areas, ulcerated, thickened and hemorrhagic. The ulcerated surfaces were shallow, almost linear, though irregular, with hemorrhagic bases and thin pigmented edges, which showed no evidence of reaction. About these there were evidences of follicular suppuration. There was a foul thin grumous fluid running from the vagina. Above the mons was the puncture point of a needle, or trochar. The whole body was anemic.

The fluid which filled the abdominal cavity was a slightly cloudy, thin, serous transudate. The small intestines were collapsed and covered by a rather thickened, somewhat edematous, fatty, fibroid omentum. The sigmoid, cecum and transverse colon were distended, not excessively, with gas. The appendix was normal and lay immediately behind the caput coli. In the fatty mesentery there was a moderate amount of congestion with a fair number of small petechial hemorrhages. Upon the otherwise smooth shiny surface of the visceral peritoneum there were a few petechial hemorrhages. The whole small intestine was somewhat congested. There was evidently some sclerosis of the peritoneum between the stomach and the transverse colon, and in this thickened tissue, particularly along the greater curvature of the stomach, was a very considerable diffuse congestion.

When the sternum was removed, the lungs did not collapse. Each pleural cavity was about half filled with a fluid which resembled that in the peritoneal cavity. There were some old left apical adhesions and some old apical and lateral adhesions over the upper lobe on the right. There were old fibrous adhesions between the transverse colon and the gall-bladder and between the liver and hepatic flexure. There were old scars in the adhesions between the parietal peritoneum and the upper part of the descending colon. All of the connective tissue about the splenic and hepatic flexures and the upper part of the descending colon were scarred and sclerotic. There were no abnormal adhesions about the tubes or ovaries. The abdominal aorta from the renals down to the bifurcation was practically a shell of calcified material; just above the bifurcation there was no evidence of normal tissue; above the renals the process was less well marked, but still there were numerous calcified plaques, some hyaline; mostly, however, fatty.

The right lung (425 grams) was fairly voluminous. The lower third of the lower lobe was completely collapsed and evidently not air-containing; the rest of the lung was crepitant. The pleura was marked with tags of old fibrous adhesions, and there were old fibrous adhesions between the upper and middle lobes. The upper half of the upper lobe was covered with a nodularly scarred pleura in which the scarring was most evident in the apex. Beneath the pleura could be felt very numerous small nodules, probably healed tubercles, and a fair number of these could be felt also in the pleura of the lower lobe. On section the upper lobe was very evidently edematous, so that fluid dripped from the cut surface on pressure. The lower lobe was merely congested with a very moderate amount of edema. The collapsed part was deep purple in color. The middle lobe was approximately normal. The left lung (535 grams) was quite voluminous and except in the posterior half of the lower lobe seemed to be air-containing. Beneath the completely smooth pleura, except at the apex, there were quite numerous small healed fibrotic lesions and at the apex was a large contracting scar. For the most part, the lung was pale, but in the posterior part of the lower lobe it was deep purplish in color and showed in the pleura very numerous confluent hemorrhages. On section the upper lobe appeared moderately congested and quite edematous. There were no apparent active tuberculous lesions. The lower posterior part of the lower lobe was tremendously edematous and tremendously congested also. The scraped surface of the hypostatic portion of the lung had a somewhat indistinctly granular surface.

The liver was exceedingly small (725 grams) and contracted; the whole organ was very pale, the surface was finely granular. The capsule was irregularly thickened and there were a few old adhesions between the dome of the liver and the diaphragm. The organ was exceedingly firm. On cross section, the parenchyma appeared finely granular and of a pinkish color, with small yellowish islands of degenerated parenchyma between the bands of connective tissue. The gall-bladder was filled with a very thick mucoid bile. There were no calculi. The ducts were patent.

The heart was small (250 grams). There was some edema of the epicardial fat and around the base of the aorta of the great vessels there were quite numerous petechial and ecchymotic hemorrhages. The coronaries were somewhat tortuous, but not evidently particularly sclerotic except in their first portions where, to the fingers, they felt rather sclerotic. The chambers of the right side of the heart were slightly dilated. The margins of the tricuspid valve were very slightly sclerotic; but the pa-

pillary muscles were considerably sclerotic and in the myocardium there were patches of fibrous tissue. The mitral valve was somewhat sclerosed, generally thickened, and showed some patches of fatty degeneration in the leaflets. The papillary muscles were quite sclerotic, firm, white, and the chordæ tendineæ were somewhat contracted and thickened. The chambers of the right side of the heart were slightly dilated. The myocardium generally was flaccid, anemic, brown, and contained an increase of fibrous tissue. The aortic valves showed evidence of an old endocarditis in the presence of adhesions between the valves at the point of insertion. The posterior leaflet was fenestrated at its left side. The sinuses of Valsalva showed some evidence of fatty degeneration, but above this the aorta was smooth and approximately healthy until one arrived at the transverse part, which was completely outlined with firm calcified plaques. From here down, the arteriosclerotic process became more and more marked. The mouths of the coronaries were patent and the conoraries themselves, although they showed a patchy arteriosclerosis with calcification, were open.

The spleen was small (95 grams)) soft, the capsule was irregularly thickened and showed tags of old adhesions. The general color was bluish. On cross section, the pulp was anemic. There was some increase of fibrous tissue, the Malpighian bodies could not be seen. The organ was not pulpy.

The left adrenal was cavitated and showed no increase in lipoid. The left kidney was small (115 grams) and pale. The capsule stripped with fair ease leaving a very finely granular surface; there was tearing of the cortex at a few points. The stellate veins were not congested. On cross section, the organ was quite pale, was slightly yellowish, the cortex was reduced in thickness. The relation between the cortex and medulla was normal; the line of demarcation was lost. There was some evident fibrosis of the papillæ. The right kidney (115 grams) corresponded for the most part in appearance to that of the left. In the right kidney, however, the cortex was somewhat thicker than in the left and the whole organ was more edematous.

The right ovary was cystic and fibrotic and measured 3½ x 2½ x 2 cm. The other ovary was fibrotic. There was a very distinct cervical erosion that almost completely surrounded the os. At the upper edge of the os, the erosion had really become an ulceration, somewhat serpiginous in form and commencing to undermine. The cavity of the uterus was hemorrhagic and eroded. The lower uterine segment was very long and edematous. The cavity of the body of the uterus was filled with blood clot and hemorrhages about this were seen within the mucosa. The myometrium was fibrotic and showed well marked evidences of sclerosis. The urinary bladder contained a small amount of cloudy urinous fluid. The mucous membrane of the bladder was apparently healthy. There was no evidence of urethritis.

The stomach was filled with a thin mucous material. The mucous membrane was rather diffusely congested and showed rather numerous fine hemorrhages. This was particularly true of the cardiac portion. There were no obvious changes in the pyloric orifice, nor in the duodenum. The splenic artery was quite sclerotic, though not excessively so.

The pancreas itself was quite firm, very pale, but not evidently sclerotic.

Anatomic Diagnosis:

Atrophic hepatic cirrhosis; hypostatic pneumonia; arterio-sclerotic kidneys; senile atherosclerosis; general anasarca; anemia.

III. REMARKS.

It appears from the post-mortem findings that in this case the ascites and edema were rather the result of the hepatic conditions than of abnormalities of the heart and kidneys. As a matter of fact, the kidneys were rather of the senile than of a nephritic type, and may reasonably be attribguted to the arteriosclerosis which in the renal vessels brought about decrease of the passage of food and oxygen to the kidney cells. This being the case, and the arteriosclerosis being generalized in the kidneys, the renal cells would undergo atrophy, and, decreasing in size and number, produce a relative fibrosis, and the gross picture of chronic diffuse nephritis of the interstitial type.

ACUTE LOBULAR PNEUMONIA.

A W., aged forty-eight years, was admitted to the Cincinnati General Hospital on March 2, 1916. She died on the following day.

I. ABSTRACT OF CLINICAL HISTORY.

Past History (given by her husband):

Has been taking paregoric; demented last three months with menopause; procidentia; tumor cysl? Injury to left eye three weeks ago and ptosis since.

Past History:

Unreliable; patient says she contracted pneumonia December 18, 1915, and that she has been sick since that time; says she coughed a good deal; says that she has had no menstrual period for three months, that this has never occurred before; says the mass in the abdomen has been noted for eighteen years, gradually grown larger; says she gave birth to a baby eight years ago.

Present State:

Patient appears between forty-five and fifty years of age. A woman, sparely nourished; an odor of acidosis, very marked. Upon entering cell, she started to talk and scream. Teeth were in very poor condition, blackened; upper teeth gone in front. The gums could not be well seen; pyorrhea marked. Pupils not seen.

Chest small but symmetrical. Minor details can not be seen. On percussion, note seems hyper-resonant over front, sides and back, except right side just above the liver in the axillary line, where it seems dull. On auscultation breath sounds are weak; no rales heard in front. Expiration seems prolonged. Over right back, a few fine crackles are heard over the base at the end of inspiration. Lower lung borders are equal.

Abdomen lies about three to four inches above the costal margin, and is highest a little below the umbilicus and a little to the left. Striæ marked. On palpation, there is no tenderness complained of; there is a mass extending above umbilicus, and to the left, filling the groin and side. Mass is smooth, moderately tense, fluctuates as if fluid were present. On percussion, the note is tympanitic in upper abdomen and in right flank. Note is dull all over the mass and all through left flank. Liver and spleen not felt. Liver dullness extends to sixth rib, midclavicular line.

There is a large scar on the left shin and a smaller one on the right. Knee jerks not obtained. No edema. Patient moves arms and legs well, protrudes tongue normally. Sensation apparently not impaired.

Pulse: rather rapid and weak. No complaint of pain.

Urine: clear, amber; 1.018; acid; albumin ++; no sugar; occasional white and red blood cells; a few casts, fine and coarse; epithelial cells prominent.

Patient's breathing was rapid and very shallow. Pupils were dilated and inactive. Only one sound could be heard over heart anywhere. Pulse could not be obtained at wrist. Body warm and covered with moist perspiration. General condition very bad. Did not respond to stimulation, and died quietly at 1:40 A. M.

Clinical Diagnosis:

Chronic morphinism; hypertrophy and dilatation of the heart; arteriosclerosis; chronic diffuse nephritis; ovarian cyst; anemia; procidentia; emphysema.

II. AUTOPSY PROTOCOL.

The body was that of a female, white, of about fifty-five years of age. The whole body was exceedingly anemic and emaciated. Rigor mortis was incipient. Over the left eye was a bruised looking area of about 1 cm. in diameter. About the lips there was spotty cyanosis. The left pupil was larger than the right, and there was a slight jaundice of the conjunctivæ. The chest showed nothing abnormal, except the exceedingly prominent landmarks due to the emaciation. The abdomen was very much enlarged and extended about 12 cm. to each side of the median line. Both legs were very thin and had numerous subcutaneous, almost purpuric lesions present, some of which resembled bruises. The teeth were in fair condition, but the gums were somewhat contracted.

Upon making the usual post-mortem incision, the abdomen was found to be occupied by a large, intact ovarian cyst. The liver extended about 7 cm. below the ensiform cartilage. Upon laying the cyst to the side, the bowel was found to be gathered on the posterior abdominal wall. The stomach was exceedingly large and occupied most of the left hypochondriac, epigastric, and a part of the left lumbar region.

The lungs did not collapse when the thorax was opened. No pleural exudate or increase of pericardial fluid was found when the pleural and pericardial sacs were opened. The left lung had apical adhesions but there were none on the right.

A few recent and old artero-lateral diaphragmatic adhesions were present. The heart was of about normal size, perhaps a little small.

After removing, the examination of the individual organs showed the following:

The right lung had old adhesions between the lobes. The organ was very pale, with a fibrinous exudate on the surface posteriorly in the lower lobe. Some portions were crepitant and others were not. To the touch, the latter were more consistent. Upon cross section, clear areas were seen, containing air, and others were not air-containing. The latter areas showed beginning lobular pneumonic consolidation. The outer portions of these areas were hard, below which the cut lung tissue was of a gelatinous consistency. The lower half of the upper lobe and lateral-posterior part of the lower lobe were the seat of inflammatory processes and beginning to show lobular pneumonic consolidation. The left lung was about the same as the above, except that an inflammatory and non-crepitant area was in the middle of the lower half of the upper lobe. The inflammatory edema was very conspicuous in this region.

When the heart was opened, the right auricle contained a moderately adherent, chicken-fat clot. The valve leaflets of the auriculo-ventricular valves were healthy, except for some fatty degeneration in the mitral. The muscle was brown, with some fibrosis of the papillary muscles but apparently none in the myocardium. The aorta was healthy except for a few scattered patches of fatty degeneration. The coronaries showed no abnormalities.

The outer surface of the liver was about the same color and consistency as butter, with some areas

of congestion. Upon cross section the whole appearance was of the same color as above, and when the knife was rubbed across the cut surface it was covered with a thick, oily "juice." The gall bladder was filled with a greenish mucoid bile with no calculi.

The spleen was very small and anemic. Upon cross section, the pale anemic pulp was the main abnormality; the Malpighian corpuscles could be distinguished.

The right adrenal was cavitated. Upon cross section, unusual lipoid change, particularly in the cortex, was seen. The medulla showed some congestion and hypertrophy. One small adenoma, about one-half cm. in diameter, was seen located at the union of the cortex and medulla.

The capsules of the kidneys were smooth and peeled off with some difficulty. In some places, portions of the kidney surface were very adherent to the capsule and tore when the latter was removd. The kidneys were very anemic and hypertrophied. Upon cross section, the edges everted and the color of the substance was very pale. The pelves were dilated and at points thinned the margin between it and the surface of the kidney. At these points, the cortex was thin, but at points other than these, the relation between cortex and medulla was normal. The ureter on the left side was dilated, due to pressure of the cyst upon it. The right ureter was dilated, but not to as great extent as the left.

The stomach was very much distended and anemic. It was filled with a greenish fluid mixed with mucus. The lining was covered with irregular areas of atrophy, giving the whole surface a scarred appearance with no rugæ. The remainder of the gastro-intestinal tract was collapsed, but when opened showed no abnormalities. The appendix was present, resting coiled behind the cecum. There were a few adhesions between the gall bladder and the transverse colon.

Weights of the various organs: Liver, 5,000 grams; lung, right, 435 grams; left, 275 grams; kidney, right, 150 grams; left, 190 grams; spleen 75 grams; heart 190 grams; ovarian cyst, 5,015 grams.

Anatomic Diagnosis:

Acute lobular pneumonia; pulmonary inflammatory edema; fatty liver; chronic atrophic gastritis; chronic diffuse nephritis; ovarian cyst; bilateral hydronephrosis and hydroureter; procidentia; anemia.

III. REMARKS.

The main interest in this case is not so much the acute terminal lobular pneumonia, as the evidences in the liver of chronic reduction of oxidations. This is shown by the tremendous fatty change, producing an appearance which goes with all chronic intoxications which lower oxidation.

Notes and News

LOCAL

On April 6, Dr. Ralph Reed read a paper before the McDowell Medical Society on "Dementia Precox."

The State Medical Board has refused to reinstate L. F. Preston, of this city, who advertised a sure cure for tuberculosis.

On April 7 Dr. Chas. W. Tidball read a paper before the Cincinnati Medical Society on "Hydrastis Canadensis."

The Neurological Society of Cincinnati met at the office of Dr. C. Kiely on April 6. The meeting was devoted to case reports.

Supt. Bachmeyer, of the Cincinnati General Hospital, is chairman of the local Committee on Arrangements for the forthcoming meeting of the Ohio Hospital Association.

The Cincinnati Hospital medical library has issued a neat folder containing "Suggestions and Rules for Patrons." The privileges are ample, and it is the local profession's loss if advantage is not taken of them.

The subject discussed by Prof. John Uri Lloyd before various scientific societies during his recent trip East was "Demonstrations in Colloidal Chemistry, with Experiments Showing the Action of Hydrated Aluminum Silicate."

At the meeting of the Southwestern Eclectic Medical Association, at the Business Men's Club, April 5, papers were read by Dr. G. S. Van Horn on the "Thyroid Gland," and by Dr. Alphonse Riggs on "Vaccination."

Dr. William Ravine has been appointed director of the psychopathic laboratory of the Juvenile Court. He will have the aid of a corps of specialists as consultants, and also of an assistant director trained in clinical psychosis, who will be on full time. The laboratory will also give aid to the Court of Domestic Relations. It is believed a routine psychiatric examinaton of women seeking divorce will throw light on the cause of marital unhappiness, with consequent opportunity of preventing a separation.

Dr. William H. Campbell, formerly of Norwood, with offices in this city, specializing in diseases of the eye, ear, nose and throat, died in Los Angeles from pneumonia, March 16. Dr. Campbell possessed a most charming personality, had an extensive practice among the well-to-do, and yet always found time

to help those in needy circumstances who required his care. The Cincinnati Academy of Medicine and the local profession have sustained a great loss in his death. He was aged fifty-four.

Dr. Martin H. Fischer was one of the special guests at the meeting of the Tennessee State Medical Association, Knoxville. He spoke on "Principles of Treatment in Nephritis." Another invited guest was Dr. F. P. Calhoun, of Atlanta, who made an address on "Significance of Retinal Changes in Cardio-Renal-Vascular Disease."

CINCINNATI SANITARIUM.

The forty-second annual report of the medical director of the Cincinnati Sanitarium has just been issued.

The medical summary of the year 1915 is interesting. At the beginning of the year there were 89 patients under treatment; 223 were admitted during the twelve months. The percentage of recoveries to admissions was 29.57, which, considering the condition of many patients, is an excellent record.

Mention is made of the addition of a rest cottage for patients requiring treatment for disorders nonmental in character. This cottage occupies a separate plot of ground, four acres in extent.

Dr. F. W. Langdon is the medical director, Dr. Berthold A. Williams, the senior resident physician, Dr. Emerson A. North directs the operations of the clinical laboratory.

GENERAL.

The rabies menace in Utah is to be investigated by Dr. L. D. Fricks, surgeon of the United States Public Health Service.

The Board of County Commissioners of Marion County, Indiana, have advertised for bids for the new county tuberculosis hospital to cost about eighty thousand dollars.

Sixty-five cases of typhoid fever were reported to the Maryland State Department of Health during February. Of these, nineteen cases occurred in Baltimore.

On the promise to administer no more narcotics, the State Medical Board has deferred the revocation of the license of Dr. J. F. Jones, of Columbus, Ohio, pending good behavior.

The report of the treasurer of the Committee of American Physicians for the Aid of the Belgian Profession, for the week ending March 18, 1916, is as follows: No contributions for the week ending March 18, 1916; previously reported receipts, $7,941.86; total disbursements, $7,310.00; balance, $631.82.

Dr. H. G. Morgan was elected president of the Indiana Health Inspectors Association at the first annual meeting, Indianapolis, March 16. The association has determined to establish a better system of inspecting milk and meat.

The city health officer, of Nashville, Tennessee, recommends that negro inspectors be employed in the schools for colored children. The recommendation is the result of the discovery that the sanitary conditions of these schools is the cause of the large mortality rate in the colored population of the city.

The addition of saponin to food mixtures which are sold for use in place of white of eggs is regarded by the Bureau of Chemistry of the Department of Agriculture as constituting adulteration within the meaning of the Food and Drugs Act.

The next examination for admission into the Medical Corps of the Navy will be held on or about June 16, 1916, at Washington, Boston, New York, Philadelphia, Norfolk, Charleston, Chicago, Mare Island, Cal., and Puget Sound, Wash.

The Kendallville, Indiana, Medical Society, composed of all the active physicians in the city, is co-operating in the erection of a hospital building in which the members of the society can place their patients.

The cause of medical research has been enriched more than one million dollars by appropriations just announced by the Rockefeller Foundation. The bulk of this sum will be utilized for research and hospital work conducted by Dr. Alexis Carrell.

On account of the pure water supply of which Pittsburgh boasts the typhoid death rate has been cut 94 per cent. In 1906 the death rate from that disease was 109.7 to the hundred thousand population. In 1915, this had been reduced to 6.4 per hundred thousand.

In order to give the people more intelligent representation, the physicians of Illinois have determined to use their influence to elect one or more physicians in each of the State's fifty-one legislative districts. So many vicious bills have been introduced during the recent sessions of the legislature, that in self-defense and in defense of the people, the medical profession of the State feels that only well informed physicians can curb the efforts of various interests to force their pet measures on the public, at the expense of its health.

The anti-tuberculosis crusade instituted by the National Association for the study and prevention of tuberculosis is having a marked effect on the mortality of tuberculosis. According to a statement of the association the death rate has declined from 200.7 per 100,000 population in 1904, to 146.8 in 1914.

Dr. Theodore B. Sachs, who had been at the head of the great Tuberculosis Sanitarium of Chicago, committed suicide on April 2. Dr. Sachs was displaced recently, and Dr. Caldwell appointed to the position. A fierce political fight ensued, the effect of which weighed so heavily upon Dr. Sachs that he could not endure to live.

The Philadelphia Academy of Surgery announces the Samuel D. Gross prize of fifteen hundred dollars. Essays will be received in competition for the prize until January 1, 1920. The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens."

NECROLOGY.

Dr. Charles D. McLeod, aged fifty-two, Chatfield, Ohio, March 8.

Dr. Osa Hoerner, aged thirty-one, Lewisburg, Ohio, March 2.

Dr. Edward Cass, aged eighty-four, Dresden, Ohio, March 9.

Dr. George H. Masters, aged sixty-eight, Prospect, Ohio, March 5.

Dr. A. C. Matthias, aged seventy-one, McComb, Ohio, March 6.

The Calendar

Cincinnati Academy of Medicine, April 10.

Personal Experience with Anoci-Association Anesthesia; Demonstration of Some Points in Surgical Technique (illustrated), Dr. Walter Griess.

West End Medical Society, April 11.

Osteomyelitis, Dr. W. D. Haines.

Cincinnati Hospital Lecture, April 14.

Latent Syphilis, Dr. A. Scott Warthin.

The Ohio Hospital Association convention will be held at Cincinnati, May 24 to 26.

The forty-third annual National Conference of Charities and Corrections meets at Indianapolis, May 10-17. This conference is composed chiefly of representatives of institutions whose object is social service.

The American Urological Association meets at St. Louis, April 17 to 19.

The North Carolina State Medical Society meets at Durham, April 18.

The Lancet-Clinic

A Weekly Journal of Medicine and Surgery.

MARTIN H. FISCHER, M.D.
ANTHONY G. KREIDLER, M.D. } *Editors*

¶ *The advertising pages of the Lancet-Clinic conform to the Rules of the Council of Pharmacy of the Americal Medical Association.*

¶ *Manuscripts, books, et cetera should be addressed to The Editors of the Lancet-Clinic, General Hospital, Cincinnati. Business communications should be addressed to The Business Manager of the Lancet-Clinic, 648 Main Street, Cincinnati.*

¶ *Contributions are accepted for publication with the understanding that they are contributed solely to this journal. Manuscript should be typewritten and on one side of the sheet only. Photographs or drawings, when necessary to the text, must accompany the manuscript. Letters to the Editors on matters of medical or surgical interest will be welcomed. Anonymous communications are ignored.*

¶ *References to Articles in journals must give author, volume, page and year, thus: JOHN SMITH: Journal of Medicine,* **22,** *1471 (1916).*

¶ *References to Books must give author, title, edition (if not the first), page, city of publication and year, thus: JOHN SMITH, Operative Surgery in Borneo, second edition, 52, London, 1916. Unless references follow these rules they are worthless and must be discarded.*

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The Lancet-Clinic

SATURDAY, APRIL 15, 1916.

Contents

Contributed Articles

ON THE INHERITANCE OF ACQUIRED CHARACTERS.*

CASPER L. REDFIELD,

CHICAGO.

IF you will look in your dictionaries you will see that "to acquire" means to obtain by effort, by exertion, by the performance of work. Hence, an acquired character is a dyamic development of an organ obtained by exercising it. A mutilation is not an acquirement. When the tails of mice are amputated, the acquirement is in the muscles of the amputator, not in the mice.

Mutilations are not inherited. If they were, human beings would be little more than heads and trunks covered with scars representing the mutilations their ancestors received. LAMARCK told us that long ago, but those who pretend to give us information about his theory appear to be wholly ignorant of the matter. LAMARCK also said very distinctly that the action of the environment upon the parent had no effect upon the offspring, a fact which shows that the literature about LAMARCK'S theory is largely rubbish.

The strength or power of organs is developed by exercising them, and such a development is strictly an acquirement. In acquiring development by exercise, time is an element. A man who goes into a gymnasium acquires more development in a week than in a day; more in a month than in a week; and more in a year than in a month. Similarly, a man who performs mental labor gains more mental development in ten years than he does in one, more in twenty years than in ten, and so on, as long as mental development remains possible.

* Extracts from an address delivered before the Chicago Medical Society, February 2, 1916.

If an acquired development is to be inherited, the parent must make the acquirement first and produce the offspring afterwards not produce the offspring first and make the acquirement afterwards. A rational consideration of this fact makes it evident that it is necessary to take into consideration the age of parents in any investigation involving the inheritance of acquirements. This I have done for many hundreds of eminent men and have published the results.[1] These results show that eminent men are usually produced by old fathers, and always by slow breeding extending over a century or more of time. The fact that the age of parents affects the quality of the progeny is now acknowledged, even by those who balk at the interpretation of that fact.

The number of individual pedigrees of men, horses, dogs and cows which I have investigated and published now amounts to thousands, and they all show the same results. But it has been charged that I have used selected cases to support a preconceived theory, and have failed to give the facts in regard to contrary cases. The charge that I have given no contrary cases is true, and the reason it is true is because there is no such thing as contrary cases to be given. To encourage the hunt for such I have deposited one thousand dollars with the American Genetic Association of Washington, to be paid out at their discretion as such cases are discovered.[2] The total offer is divided into five sections:

1. A prize of two-hundred dollars when it is shown that an intellectually superior man was produced by breeding at the rate of more than four generations to the century.

2. A second two hundred dollars when it is shown that a very great man (intellectually) was produced by breeding at a rate higher than three generations to the century. (The average for three generations is about ninety-seven years.)

3. A third two hundred dollars if improvement is discovered to have occurred in any kind of animal when the amount of acquirement per generation for three generations was below the average or the standard for that breed.

4. A fourth two hundred dollars if a decline in powers ever failed to follow breeding between mates possessed of acquirements below the standard.

5. A fifth two hundred dollars if there can be found any group of animals in which the improvement or decline in animal powers is not proportional to the amounts of acquirements in previous generations.

The whole offer is based squarely and unequivocally on the question of the inheritance of acquirements, and the appeal is to facts of record. If those who deny the inheritance of acquirements have any foundation for their statements, it will not be necessary for them to do any work to take the prizes offered. All they need to do is to send in their evidence and make their claim. If they do not do this, the public will have no difficulty in understanding the reason why. It will be either because they have never investigated the matter and know nothing about it, or because they have misrepresented the results of their investigations.

A horse power derived from a horse does not differ in any way from the horse power derived from a steam engine. They are the same thing and do the same work. The result of a mathematical calculation performed by the human intelligence does not differ in any way from the result of the same calculation performed by a calculating machine driven by a motor. Modern automatic machinery performs many things ordinarily performed by the human intellect and the human hand. A man can move and think only because of heat units derived from food. The germ can exist and go into the reproductive process only because of the heat units it receives. Heat units are the source of mechanical energy.

That energy which enables an animal to move, and that energy which is the human intelligence, is the same thing as the energy which drives the steam engine, the water wheel and the wind mill, and is governed by the same laws. My offer of one thousand dollars is based squarely upon the soundness of those laws and their application to the physical and mental energy in animals. Will the American Genetic Association officially declare that the laws relating to energy are not valid?

The first of these laws is that while energy may be put through many transformations, it can neither be created nor destroyed. This is

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[1] CASPER L. REDFIELD: Dynamic Evolution, a Study of the Causes of Evolution and Degeneracy. New York, 1914.

[2] Details of the offer may be had by applying to the American Genetic Association, Washington, D. C., or to the author.

known in science as the "Conservation of Energy."

The second law is that energy left to itself normally dissipates, and can be concentrated only by the performance of work. Science knows this as the "Dissipation of Energy," and upon it is based a hypothesis that the universe is a system running down.

We have an example of the operation of the second law in ordinary life. A man gains strength by exercise, and loses it by idleness. If the gain by exercise— physical or mental—is not carried over by heredity to the next generation, then evolution from a lower to a higher stage is nothing else than a series of special creations. The denial of the inheritance of acquirements necessarily involves the doctrine that special creation still continues, and is ever-present in the reproductive process. The improvement in the American trotter during the past century involves either special creation or the inheritance of acquirements, and not otherwise can that improvement be explained.

525 Monadnock Block.

THE PRECOCITY OF GENIUS.

EDWIN W. GLOVER,

CINCINNATI.

"Genius is the activity which repairs the decay of things. Nature, through all her kingdoms, insures herself. She makes a man, and having brought him to a ripe age, she will no longer run the risk of losing this wonder at a blow, but she detaches from him a new self. So, when the soul of the poet has come to ripeness of thought, she detaches and sends away from it its poems and songs—a fearless, sleepless, deathless progeny; a fearless, vivacious offspring, clad with wings which carry them fast and far and infix them irrecoverably into the hearts of men."—Emerson.

§ 1.

THE difference in the attitude of the general public and the scientifically trained mind toward the early indications of great and unusual powers in children shows the strange anomalies in human nature. The world at large loves a youthful wonder of mentality and grows quite hysterical over a remarkable genius of inspiration and emotion. On the other hand, the plodding man of talent, he, who with a more matured mentality, wins by sheer force of untiring effort, is the one who appeals to the scholastic mind. Toward the precocious infant, he seems to feel the most violent antagonism. The prejudice which, by the way, is stronger in the United States than in other countries, can not be attributed to jealousy alone; for the feeling displayed is too intense, and the desire to exterminate the species too general, to allow the acceptance of so slight a reason as a sufficient cause. Rather, it seems that in the bitterness of his attitude, man's primordial instinct of self-preservation asserts itself. As a rule, he does not wait for the future to tell its story, but, at the first sign of youthful precocity, strikes, and like the savage, gloats over the supposed annihilation of his enemy. That the contest is mental, and his foe a mere child, only appears to add more zest to his pride, for he, too, has spent his life plodding with the plodders. In this intolerant attitude, men who have reached the upper rungs of the ladder of fame show that they are just as sensitive to what the lawyers might term their "rights of eminent domain" as our physical giants are of the retention of their prowess.

It is an interesting sight to watch the skill and brawn of two well-matched athletes in action, but it is not a pleasing spectacle to observe a multitude of distinguished scholars condemning a youthful genius because he, by the grace of God, does things they can not, never could and never will be able to do. Usually a so-called prodigy in any art or science is enough to start the parochial criticism, but let a real genius appear, one who is labeled a second NEWTON, a second LORD KELVIN, a second TURNER, or a second MOZART, and the entire press of the artistic and scientific world will rush eagerly forward in an effort to prove that this phenomenon, too, is but a flash in the pan, and one who will never transform or create. It has been so since QUINTILLAN said: "The early blossom of talent is rarely followed by the fruit of achievement," to the present day when LOMBROSO, to prove his theories that precocity is a sign of degeneracy, changes the old proverb, "A wit of five is a fool at twenty," to "A man with genius at five is mad at fifteen."

LESCHETIZKY, who, aside from LISZT, has taught more musical prodigies than any other of our great teachers, recently, in speaking of America, said: "The one thing I dislike there is the attitude toward prodigies. You have some of the best critics in the world, perhaps the

best, but a prodigy has only to appear for them to annihilate him. To be artists, there must first be prodigies." LESCHETIZKY, when he gave this interview, doubtless had in mind, among other things, the New York critic's propounding of the conundrum, "When is a prodigy not a prodigy?" and the answer, "Nine times out of ten." This sally has a clever turn, but the statement is not based on solid fact. That an appalling number of brilliant children in the different domains of life have never fulfilled their early promises is true, but it is equally true that the majority of our epoch-making geniuses have been precocious at an extremely early age. There are cases where great talent has awakened after the period of adolescence, but the examples, particularly in those avocations dominated by the emotions, in comparison with the others, have been rare.

As superior men do not come into the world by haphazard, and precocity is simply congenital ripeness, we must agree with the adage quoted above, "To have geniuses we must first have prodigies." Based on this belief, and also on EMERSON'S maxim: "Genius does what it must, talent what it can," this paper is not a discursive one, but one whose object is to offer some remarkable instances of youthful endowment in the various realms of knowledge.

With the freaks who, for illustration, have extraordinary numerical power and no aptitude for mathematics, and the counterfeits or human parrots who, like the boy who was supposed to be improvising for an audience but stopped suddenly and cried out, "Papa, I have forgotten the rest," we will not waste our time.

In order to present a comprehensive view of my investigations on this subject and save them as much as possible from incoherency, I have divided the accepted examples of precocity into various groups. These are as follows: (1) warriors; (2) painters and sculptors; (3) poets and writers in general; (4) musicians.

§ 2.

As the horrors of the present world's war are part of the daily history of our time, and its tremendous bigness too incomprehensible for our understanding, I will pass it by and be content with two references that seem in keeping with the subject of this paper.

DR. ARMGAARD KARL GRAVES, in his "Secrets of the HOHENZOLLERNS" says, "It is a notorious fact that wars and acts of aggression are never entered into by the HOHENZOLLERNS until they have reached the age of forty."

This is of remarkable significance when history has shown us that acts of conquest are made at an extremely early age and in the first years of manhood, when ideals and ideas pulse powerfully and run high. In the instances of TAMERLANE, ALEXANDER THE GREAT, ATILLA and BONAPARTE, their conquests were made in their early manhood, in some instances, even in their teens. The history of the HOHENZOLLERNS, with one or two exceptions, show the distinct opposite. This statement was verified in a way recently by Miss JANE ADDAMS upon her return from Europe, where she had foolishly gone to use her personal influence with the fighting sovereigns toward establishing a permanent peace. She said that the present war was an old man's war, and added that she found little enthusiasm among the younger men for the grevious tasks that were being forced upon them.

There is one thing though that history shows us, and that is that the routine of an idle standing army, with its red tape and sham battles is not sufficient for the individual to develop special renown for his warlike attainments. It requires the field of battle, with patriotism all aglow, and the passions strained to their utmost, for military genius to assert itself and startle the world with its dazzling achievement.

Wars of all ages have furnished notable examples of these accepted opportunities, and, as Graves says, given the world many cases of youthful strategic ability and military genius.

The youngest general that the pages of history record was HENRY IV of France, who, at sixteen, occupied that position as head of the Huguenot army. Three years later, he became King of Navarre, and at the fourth decade of his career, had overthrown his enemies and been made King of France. At the same age—sixteen—the elder SCIPIO AFRICANUS acquired fame at the battle of Ticinus, and was only twenty-nine when he conquered the Carthagenians at Zama. ALEXANDER THE GREAT was a famous warrior at eighteen, became king of Macedonia at twenty, held the world in the hollow of his hand at twenty-five, and died at thirty-two, an age when most men have just fairly started in their life work. At the tender age of ten, PETER THE GREAT was crowned Czar of Russia. Ten years later he brought together

a magnificent army, and before he was thirty had won the splendid victory of Embach. CHARLES XII was another gifted youth who, before he was eighteen had finished his campaign against Denmark. A year later his battle with the Russians at Narva had been fought and won, and five years after that he had annexed both Poland and Saxony.

While twenty-two may be considered a mature age it is still young enough for one who has acquired distinguished fame in the art of war to be still considered precocious. CONDE', PHILLIP OF MACEDON, EUGENE OF SAXONY, LORD CLIVE and JULIUS CAESAR, all had won military glory by that time. The latter, the history of whose campaigns NAPOLEON carried continually with him in his youth, commanded a fleet before Mitylene between his twenty-first and twenty-second years. His first war with Spain came a short time later, and by the time he had reached the early forties he had become the most renowned soldier of antiquity. Those remarkable gods of war, HANNIBAL and CHARLEMAGNE, were battle-scarred veterans at twenty-six. The former was a commander-in-chief at that age, and in the ensuing five years fought and won all his famous Italian battles. CHARLEMAGNE, a king at twenty-six, had, by the time he had reached the age of thirty-six, conquered successively France, a large part of Germany, Italy, and a portion of Spain. The official entry made at the military school in Paris when NAPOLEON was entered as a boy of fifteen certainly does not show that he was looked upon as a prodigy. It reads as follows: "Character mild, honest and grateful; understands history and geography tolerably well; would make a good sailor." Nevertheless, this mild, inconsequential looking lad at once began storing his mind with the great campaigns of history, besides planning and mentally executing the most difficult military problems of his own. That his genius was awake and ready at an early age is shown in the rapidity of his advancement when his opportunities presented themselves. The Revolution came and with it the NAPOLEON fame began to rise by leaps and bounds. At twenty-six the boy with the supposed talent for sailing had risen from the rank of major to that of commander-in-chief of an army. All of NAPOLEON'S great victories were gained in the next decade and a half and his final overthrow was at forty-four, an age which you will agree with me is not old.

It was also Revolution—our own—that gave ALEXANDER HAMILTON the opportunity, as a boy of seventeen, of swaying vast audiences in New York with his passionate, patriotic eloquence. A year later, at an age when our boys are now leaving preparatory schools to enter college, he had not only written treatises on constitutional law that were so profound that they were attributed to other brilliant men of the day, but had also become a master in the science of artillery. He fought at WASHINGTON'S side throughout the war, and ended his youthful military career at the final victory at Yorktown.

In the three great wars of modern times—the Civil, Franco-Prussian and Russo-Japanese, the commanding generals, particularly in the latter two, were men of advanced age. This does not show that they lacked youthful ability so much as it does that they were given little chance to develop their great talents in youth.

Does any one doubt that COUNT VON MOLTKE, called the greatest soldier since NAPOLEON, would not have shown his magnificent genius at twenty-four as well as he did at sixty-four, had the opportunity offered Or that OYAMA at sixty-two, KUROKI at sixty. and NOGI at fifty-five, needed all those years to develop their military powers? In the Civil War the commanders of both the Union and Confederate forces were officers much younger in age than were the generals of the Franco-Prussian or Russo-Japanese wars. In 1861, GRANT was thirty-nine, SHERMAN forty-one, SHERIDAN thirty, MCPHERSON thirty-three, MEADE, forty-six, MCCLELLAN, thirty-five, LEE fifty-five, JACKSON thirty-seven, EARLY forty-three, HOOD thirty, STUART, twenty-eight, and LONGSTREET forty. GRANT, SHERMAN, LEE and JACKSON, all had in them the great military genius possessed by their prototypes in history, and had the same conditions prevailed would have shown an equal amount of youthful precocity. In this connection the following editorial will be of interest.

WAR'S HEAVY TOLL OF YOUTH.

"War's toll is taken in the flesh of youth. It is the future of the land, not its past, that follows the flag to death. More tears are shed for sons than for fathers, husbands or brothers. It is not only from among those of greatest youthful vigor that war does

its recruiting; it sacrifices many who are still mere children. Midshipmen of fifteen are going down with their ships in every naval engagement of the present war. Others hardly older are filling the ranks of infantry and guides.

"Our Civil War was fought by armies in which the average age was only nineteen and of officers of but twenty-three. In any country which raises its troops through voluntary enlistment, boys are bound to be in the majority. For it is youth which rushes to the colors without a thought of the horror that lies ahead, without the outstretched hands of dependents to hold it back.

"One sickens when he contemplates what this slaughter of Europe's youth means to the future of science, art and business. We will never know what a wealth of budding genius withered at the cannon's mouth."—New York Evening Mail.

§ 3.

In turning from the bellicose side of youth to the imaginative we find wonderful examples of marked ability in the children who afterward became famous in the plastic arts of painting and sculpture. As in the sister arts of poetry and music, the sensitive, imitative and creative powers of the true genius assert themselves in his tenderest years. Naturally, we must look to Italy and the men who have glorified her in art for our first examples. RAPHAEL, like MOZART in music, was the real "Wunderkind" of painting. It is said of him that he began drawing as soon as he had quitted his cradle. At twelve he was a pupil of the celebrated PERUGINO, and in four years had completed the remarkable books of sketches that are now among the treasures in the academy at Venice. In another year, at seventeen, he was painting on his own account, and at twenty-one had opened a studio in Florence, where he quickly won fame as the most inspired painter of his time. In his eleventh year we see the youthful MANTEGNA toddling along at the side of his enthusiastic teacher on his way to be entered as a member of the Guild of Painters. Again, the drawings of ANDREA DEL SARTO, at the early age of seven, were of such merit that the shopkeepers of his native Florence eagerly sought them for their trade. TITIAN, at twelve, two years before he began his studies with BELLINI, had painted a wonderful Madonna and Child, and TINTORETTO, at the same age, had literally covered the walls of his father's house with exquisite drawings. No less remarkable was the precocity of MICHAEL ANGELO, who, at fourteen, had painted a masterpiece in "The Temptation of St. Anthony." As a lad he fairly haunted studios and evinced such precious talent that GHIRLANDAJO accepted him as a regular pupil at thirteen. MURILLO was another gifted child who, before he was ten, had used the walls of his father's house for his sketching, covering them with drawings that, were they preserved to-day, would make that edifice one of priceless value. And so we find in their last ages of childhood, from eleven to thirteen, HOLBEIN and RUYSDAEL painting finished pictures, CORNELIUS executing original work in the cathedral at Neuss, VERNET helping his father, who was a famous artist, SHEFFER exhibiting in the Amsterdam Salon, and the sculptors, CANOVA and THORWALDSEN carving fine examples of the sculptors' favorite model, the lion.

Other countries have furnished equally notable instances of these infant phenomena. England has had in MORELAND, LAWRENCE and LANDSEER, three childish marvels, whose drawings made at the infantile ages of four, five, six and eight, were exhibited at the Society of Artists. LAWRENCE, at the age of ten, was even sent to Oxford by his father to paint portraits of notable people there. The remarkable part was that the experiment was a success; in fact, the beginning of his fame.

GAINSBOROUGH was a veteran at his easel at twelve, while TURNER, though held back by the direst poverty, was able to have his work exhibited at fifteen. The elder VAN DYKE had his gifted son on his royal road to fame at the age of eleven, while RUBENS, at thirteen, had finally convinced a grieved mother, who had in mind what she considered a nobler career for her son, to allow him to attend a school of painting. COROT, REMBRANDT, VELASQUEZ, HALS, the lately deceased ISRAELS and our own lamented ABBEY, all gave evidence of prodigious talent in their most childish years; in fact, so general has been marvellous precocity in painting that SCULLY in his authoritative writings on "Genius and Precocity," says: "I can not find an instance of artistic fame having been reached after the age of forty." This, too, after DU MAURIER, himself an artist, has said: "I think that the best years in a man's life are after he is forty. A man at forty has ceased to hunt the moon." But he naively saves himself by continuing: "I would add that in order to enjoy life after forty, it is perhaps necessary to have achieved before reaching that age, at least, some success."

§ 4.

"Here lies good master duck,
Whom Samuel Johnson trod on,
If it had lived, it had been good luck,
For then we'd had an odd one."

This is the epitaph to a duckling supposed to have been dictated by JOHNSON to his mother, at the age of three. The story goes that he had trod on and killed duckling number eleven of a young brood, and in his desire to have the subsequent burial complete immediately gave expression to the above memorial. Although Dr. JOHNSON'S step-daughter, MRS. PORTER, vouched for the truth of this story as she had heard it from JOHNSON'S mother, BOSWELL discredits it and gives as his reason: "That there is internal evidence that this little composition combines in it what no child of three years old could produce without an extension of its faculties by immediate inspiration." Be this as it may, BOSWELL'S own life of JOHNSON relates innumerable stories of the latter's phenomenal discernment from his infancy. At this same age of three the boy was seen in the crowded Cathedral of Lichfield, perched on the shoulders of his father, listening with rapt attention to the celebrated DR. SACHEVERELL. The father when asked why he had brought the baby to so crowded a place, said it was impossible to keep him at home for, young as he was, he had caught the public spirit and zeal for the great divine. From five years of age on JOHNSON became a voracious reader, and read with such understanding that his memory feats in connection therewith sound almost incredible. By the time he had reached his fifteenth year he was a remarkable scholar and had done, besides innumerable works, beautiful translations of Virgil and Homer.

Astounding, too, are the stories related of the boy MACAULEY who, at a similar early age, evinced a perspicacity as distinguished as that of JOHNSON. At three he read incessantly, for the most part lying on a rug before the fire with his book on the floor and a piece of bread and butter in his hand. As his memory readily retained the phraseology of the last book he had read his conversation was, as the maid said: "Very droll and quite like printed words." About this time his father took him on a visit to Lady WALDEGRAVE, at Strawberry Hill. After some time spent among the wonders of her art collection, of which he ever after carried a catalogue in his head, a servant who was waiting on the company spilled some hot coffee over the child's legs. The hostess, all sympathy, after a while asked him how he was feeling and received the reply: "Thank you, Madam, the agony is abated." At seven he started a compendium of universal history and, according to his mother, succeeded in giving quite a connected report of the leading events in history from the creation to that time. SCOTT'S "Lay of the Last Minstrel" and "Marmion" so attracted him at this time that he decided to write a poem in six cantos, of 120 lines each. After writing three cantos he became tired and never finished it. At eight he completed the heroic poem called "Olans the Great, or the Conquest of Mona," and a year later began a poem to immortalize OLANS MAGNUM, King of Norway, from whom the family to which the poet belonged was supposed to derive its name. History does not record a more remarkable memory than this boy possessed, as it is said he could read a page at a glance, and repeat it from memory with inconceivable facility.

Of the older poets, the Italians, TASSO and METASTASIO, were conspicuous prodigies. The latter as a child improvised his lays in the streets to admiring crowds, and by the age of twelve had translated the Iliad. TASSO'S "Rinaldo," a work that brought him immediate fame, was finished before his eighteenth year. GOETHE, who, at twenty-two, had sounded a new note in German drama, had been writing poems, dialogues and plays from his sixth year. The French DE MUSSET was so alert as a youth that he was the envy of all his comrades. By fourteen his poems had brought him recognition from his admiring countrymen. The "Sublime Infant," as VICTOR HUGO was called, who began to write poems and translations in his school-boy days found himself looked upon as a genius at sixteen, and at twenty-five the recognized leader of the Parisian literary world.

Let us turn again to English literature and spend another moment with some of her wonder children. In all literary history there is no more pathetic figure than that of CHATTERTON, the weird, dreamy, wayward soul, whose deception of WALPOLE with the Rowley poems was the sensation of the day. At ten he wrote his first poem, on the "Last Epiphany," and at twelve finished the first of his pseudo-antiques, "Elinour and Juga." During this time he was living a most sordid life at Bristol as an attorney's apprentice, sleeping with the footboy and taking

his meals in the kitchen. At sixteen he began the Rowley letters, those unique forgeries that were ascribed by him to a mythical genius of the fifteenth century. Why he cared to deceive the world by concealing his authorship of some of the most beautiful lyrics in the English language is more than the world of letters has ever been able to answer. In April, 1770, he went to London, to begin his labors for an existence. Five months later penniless, starving, in despair over his complete failure to eke out even a bare living, he locked himself in his garret room, tore up his papers and in the morning was found dead, poisoned with arsenic. Thus died, two months before his eighteenth birthday, the erratic genius known as "England's Marvellous Boy." Another marvel of a different type was CROWLEY, whose epical romance, written at twelve, is considered by an eminent critic of today, "the most astonishing feat of imaginative precocity on record." But with POPE writing "beautiful and touching" stanzas on Solitude at twelve, BYRON breathing love lyrics at ten, COLERIDGE filled with poetry and metaphysics at fifteen, BULWER LYTTON writing ballads at five, SCOTT at six calling himself a "virtuoso" (of what he does not say), TENNYSON doing an epic of six thousand lines at twelve, BROWNING, as a youth a poet, musician and modeler, and MRS. BROWNING, as little Miss BARRETT, writing poetry and reading HOMER at eight, we have ample evidence of the precocity of the great English poets.

Time and your patience will not permit a continuance of the many examples of poets, novelists, ministers, statesmen, scientists, philosophers and mathematical prodigies who could be added to this list, deserving as they may be. Men like BRYANT, LONGFELLOW, DICKENS, HAWTHORNE, BEECHER, BACON, WATTS, MILLS, PITT, KANT, SCHOPENHAUER, EMERSON, SPENSER, ABELARD, LEIBNITZ, HELMHOLTZ and KELVIN gave evidence of their greatness in their early years, and belong to the great list of precocious children.

§ 5.

The roll of great musicians who have shown astonishing capabilities as children is such a formidable one that in the embarrassment of riches offered one can hardly know where to turn. From PALESTRINA to DEBUSSY, RICHARD STRAUSS and REGER, the geniuses of the present day, it has been one continuous procession of "Wunderkinder." The only celebrities who have failed to show marked endowment in the babyhood decade have been GLUCK, ROSSINI and WAGNER, and their failure was doubtless due to their lack of the virtuoso talent which always figures largely in musical precocity. It has been my good fortune to teach some very gifted children, and I have been amazed at the almost uncanny technical and emotional grasp they at all times have had. Compositions of the utmost difficulty were interpreted with an inner musical understanding that the matured but less gifted artist could not give. The plodder may acquire the same amount of executive facility, but that indescribable something known as the "Divine Spark," is always missing in his interpretations. This has convinced me that music is by far the most instinctive of talents and that it is more closely allied with intense feeling than any other art. While it is hard to combine its esthetic, psychical and physiological aspects in one inclusive definition, one is safe in saying music is the art of expressing pure emotion in the most inspired manner. The faculty of doing this at an early age is one of the incomprehensible gifts possessed by musical prodigies.

We must admit that the musically gifted boy has a great advantage over his rivals in the other arts in that he can present his talents to the senses of his hearers under more felicitous circumstances. In any improvisation or performance of a composition of his own he exhibits in his virtuosity, creative and interpretive powers all the essential parts of his genius. For this reason the youthful musical phenomenon has always been able to excite public interest and reap therefrom a rich financial reward.

The exploitation of these prodigies by needy parents has been the undoing of many a budding genius, but it has gone on from time immemorial and surely will as long as there is a public eager to listen to them. By the time MOZART had reached his tenth year he had played before every court in Europe. This wonder of wonders, as a little toddler of three, used to listen to his seven-year-old sister take her lesson, and then amuse himself by trying to pick out the piece he had heard her play. The impulse to compose came almost immediately and the father, realizing he had a remarkable prodigy on his hands, began to transcribe these improvisations, the form of which even then was perfect. Not content with simple forms, however, MOZART ventured later on writing a concerto that

proved so difficult that no one could play it. When his father objected to this, the child maintained that a concerto should be difficult so that people would have to practice to play it perfectly. Encouraged by the phenomenal progress of both his children, the boy now six and the sister ten, the elder MOZART determined to travel with them. Munich, the first city visited, received the children with unbounded enthusiasm, royalty in particular going wild over them. Before they reached Vienna, the next city to be visited, the reputation of the little prodigies had preceded them. By command they appeared before the emperor, who put the diminutive MOZART through his various "stunts" of reading at sight, playing with the keys covered, improvising on given themes, etc., after which he jokingly gave him the title of "The Little Magician." After five months in Paris, where little WOLFGANG suffered a case of scarlet fever, they went to London, where they were the sensation of the hour with the public. After a visit to the British Museum, in memory thereof, MOZART composed a four part motet, his only vocal composition to English words, and presented the autograph to the museum. Several years later, at the age of fifteen, while in Italy, he performed two remarkable feats that are now historical. He was commissioned to write an opera for the carnival a year hence. To the surprise of his librettist and all concerned, the score was finished in a fortnight; this, too, in a house where he had a violinist over head, an oboe player in a room beneath, and a piano teacher in the room next door, all hard at work all day. MOZART pronounced the environment delightful for composing, as it gave him new ideas. The wonderful power of his memory and acuteness of his ear were illustrated by the other feat. The Easter music of the Sistine Chapel was zealously guarded and no copies of ALLEGRI'S celebrated Miserere were allowed to be made. After attending the service and hearing the work once MOZART went to his room and wrote out a full vocal score, which, on comparison later, proved correct in every detail. This wonderful genius, who with 624 compositions, enriched every branch of his art, was buried in a common pauper's grave. The few friends who attended his funeral, owing to a violent storm, left the hearse at the entrance to the cemetery, and he was buried without a friend or relative near. When the bereaved wife made inquiries a few days later, she found the grave digger had been changed and her search for the grave proved fruitless, nor was it ever known where MOZART was buried.

How much teaching does a genius endowed with powers that are a manifestation of Divine Grace need? This question can be asked in all sincerity in the case of SCHUBERT, one of the most inspired creative talents the world has ever known. His biographers deplore the fact that he never was made to acquire the thorough education that MOZART and MENDELSSOHN possessed, Musically, he seemed never to need it. As his old teacher, the village organist said very quaintly: "When I wished to teach him anything fresh, he would say he always knew it already. He was a constant source of astonishment to me." Before he was ten SCHUBERT asked that his teacher be dismissed, as he preferred to go his own way. Born of very poor and humble parentage, his father being a village schoolmaster and his mother a cook, he was shy, silent and diffident when brought in contact with the world at large. He was born bourgeois and always remained so. When at eleven years of age he applied for a position as chorister of the imperial court chapel choir, the other boys as they waited for their trials made all manner of fun of the little chubby, bespectacled lad dressed in his cheap, light suit, calling him a miller's apprentice. But when his turn came for examination there was a different story to tell. With his beautiful soprano voice he did such wonderful things that his detractors fairly gasped in astonishment. The insignificant looking youth was at once appointed first soprano of the choir and became the musical giant of their aristocratic school. Composing was such a passion with SCHUBERT that it might have been called a continuous performance. He was ready to compose the moment he tumbled out of bed and did improvise in the intervals of throwing on his clothes. The only thing that stopped him was poverty, for he was often too poor to buy a new supply when his music paper gave out. He was a bubbling fountain of melody, and could not read a stanza of poetry without in imagination setting it to music as he read. One of his most familiar songs "Hark! Hark! the Lark!" came to him in a coffee house and was dashed off on a bill-of-fare. So complete was this obsession that he was rarely ever known to play any other music than his own. But, if you will recall EMERSON, "a genius does what he must," you will find that that was

just what SCHUBERT did from infancy. He died at thirty-one, leaving over 1,000 compositions, over 400 of which are songs not one but what in itself would have made him famous.

To these glorious names we will add those of BEETHOVEN, who began his studies in his fourth year, played in concerts at nine, and at ten had published three sonatos, a fugue and some songs; of HANDEL, the friend of kings, who, to outwit an irate father who demanded that he let music alone, secreted, with the aid of his god-mother, a little clavichord in the garret, and there at six 2taught himself; of HAYDN who, as a tot of five, tried to make his toy horns and drums sound less like noise and more like music; of the dreamy CHOPIN, at nine, giving a public concert in Warsaw; of the wonderful LISZT, starting his dazzling career in Hungary at eight; of the epicurean ROSSINI, who had his first opera performed at fourteen; of the revolutionary WAGNER, who as a lad was so busy fighting every issue in the world that he confessed he was not a musical enthusiast until he had made the acquaintance of the BEETHOVEN Symphonies at fifteen; of MENDELSSOHN, that child of fortune, who had an orchestra of his own when he was so small he must stand on a stool to direct it, whose overture to a Midsummer Night's Dream, written at seventeen, was a marvel of perfection; of SCHUMANN, who tells us that he composed before he was seven; of RUBENSTEIN, who made his debut in a concert in St. Petersburg at nine; of our own lamented MACDOWELL, who began his brilliant career in Brooklyn, at eight; of the marvellous boy JOSEF HOFFMAN, whose concerts in New York in the late eighties attracted both a sensation and no end of bitter discussion on account of the intervention of the society for the prevention of cruelty to children; and now of the phenomenon of our own day, PEPITO ARRIOLA, the Spanish child of wonderful precocity. He is now sixteen, but has been playing before the public for eight years. Although making recently two tours of the United States, he has never played in Cincinnati. If his greedy parents do not sap his young life, much is expected of this boy. On his last tour he was traveling with a troupe of nine people, his father, mother, brother, sister, manager, interpreter, tutor and a piano tuner. I saw him with his mother in a down town music store one day as he was passing through the city, and he looked then as though the cares of the world were resting on his shoulders.

§ 6.

The sensational young prodigies of our own country like the SIDIS, WIENER, PALDA and STONER children I have purposely not mentioned because their parents claim they are only ordinary children who have been developed by the new ideas in child training. H. ADDINGTON BRUCE wrote sometime ago in the American Magazine, extended articles on the doings of these children and the theories upon which their education is based. Should these theories prove correct and their adoption general, we, in another generation, will be a nation of prodigies. In that case it is possibly fortunate for us that we will not be here to witness our own discomfiture.

SOME FEATURES IN THE MANAGEMENT OF SURGICAL DISORDERS OF DIGESTION.*

W. D. HAINES, M.D., F.A.C.S.,

CINCINNATI.

§ 1.

IN THE land of the cherry blossom they say to you, "How is your honorable stomach?" To omit some reference to this important part of one's anatomy on meeting a friend is regarded as a gross breach of the canons of propriety. Surgeons in speaking and writing of digestive disorders, have, for the three decades just past, been as insistent on solving this "problem" as is society in Yokohama or Nagasaki.

Until quite recently we have viewed dyspepsia through a gimlet hole, which, although giv-in a comprehensive view of the stomach itself, left the larger problems, causative factors and the interdependence of functionally related organs, almost without consideration.

BOLTON in England (1900), and later ROSENOW and others in America, have demonstrated experimentally the role which germ life plays in the production of disorders of digestion. Multiple erosions, ulceration of the mucosa and muscularis, together with perforation of the entire stomach wall have been produced experimentally in pigs, rabbits and dogs, by intravenous injection of certain strains of streptococci. Singu-

* Read before the Surgical Section of the Mississippi Valley Medical Association, Lexington, Kentucky, October 19-21, 1915, and the Surgical Section of the Cincinnati Academy of Medicine, March 13, 1916.

larly enough, the strains of streptococci with which experimenters have been most successful in the production of stomach lesions have been of relatively low degree of virulence.

Of the other infections produced in the course of these experiments, cholecystitis with stone formation was one of the most constant lesions occurring in those animals wherein gastric ulcer followed the injection of the organisms.

The contentions of this newer pathology are, in substance, that the organisms of an infection occurring, for instance, in the buccal cavity of a patient, may be transmitted by the lymph or blood stream to remote parts of the body and form new foci when arrested in the terminal vessels of such organs as the gall-bladder, stomach, duodenum, brain or kidney. The interval of time between primary infection and the onset of symptoms produced by the metastases may be so great that the patient can not recollect his tonsillitis or other infection, and thus the history, connecting cause and effect, may be wanting. Delay in such instances is due to an incomplete immunization in which the patient was almost able to work out his own salvation; but nature's defeat is not a complete rout, the terms of compromise finding expression in a modified organism, shorn of much of its primordial force, but still retaining sufficient virulence to establish a sub-focus when transmitted to some field possessing terminal arteries.

The comparative infrequency with which such terminal foci follow the innumerable superficial lesins occurring in the hands, limbs, feet, sinuses, gums, tonsils and genito-urinary tract, serves to accentuate the all-important role played by the forces of immunity in the preservation of health and life.

§ 2.

To illustrate a number of points in the foregoing preamble, let me sketch for you the clinical history and physical findings of a patient referred to me for operation for ulcer of the stomach.

The patient, a man forty-five years of age, a native of Malta, with a good family history, says he has suffered with sour stomach, belching and vomiting for many years. His earlier attacks were mild and of short duration, and he soon learned that a teaspoonful of baking soda taken after meals would ward off a threatened attack. Later in his history the soda lost its beneficial influence, and the attacks became more frequent and increased in severity to such an extent that he has lately been forced to stop his work until the attack subsided. The present attack of stomach trouble has been going on for five weeks and the distress is getting worse. He vomits four or five times in twenty-four hours, and has pains in his stomach soon after taking food. He has never vomited blood; the vomitus consists of food, bile and much thick ropy mucous, and has contained food which he had taken twenty-four hours before. Pain in the epigastric region and back are relieved by vomiting. His appetite is good and he does not restrict his diet. At the age of thirty he weighed 155 pounds, he now weighs 122 pounds. He had no other symptoms. He denies having had a venereal infection.

Physical examination revealed a swarthy skin marked by many pigmented spots and numerous cicatrices. The cicatrices, he said, were caused by a fever, of which he suffered as a child in his native home. He is emaciated, obstinately constipated, has a malodorous breath and appears to be a very sick man. His abdominal wall and skeletal muscles are flabby. He is tender over the entire abdomen, perhaps a little more tender in the region of the umbilicus than at any other point; his stomach and transverse colon are prolapsed to a point midway between the umbilicus and the symphysis pubis. Except for a slight presystolic bruit, nothing abnormal was detected in his heart or lungs. His mouth contains "bridge work" and a number of decayed teeth. There is an extensive infection of the alveolar process. Examination of the rectum and genitalia was negative. The urine contains albumin and granular casts. X-ray examination revealed the full extent to which the teeth and adjacent tissues are infected.

Removal of the "bridge," its supports and a number of decayed teeth, followed by proper medication and dieting, restored this patient in a comparatively short time to a splendid condition of health, which still continues, although nine months have elapsed since the disappearance of his ulcer symptoms.

§ 3.

By following the postulates of this newer pathology, surgeons have been enabled to account for numerous types of digestive disorders and to fix their origin as being located in some

organ perhaps far removed from, but more or less intimately connected functionally with the stomach. The deductions in the well known case of "Mary the typhoid carrier" should have had a wider range of application in clinical medicine than has hitherto been accorded.

A number of years ago, my assistant and I noted the great difference in the post-operative histories in favor of those cases wherein we drained the gall-bladder whenever practical in dealing with stomach lesions. While more or less empirical, the practice was based upon the idea of the interdependence of organs, and our success encouraged me to report our work before the surgical section of the Ohio State Medical Association eight years ago. Although the report was accorded a favorable hearing, it was not taken very seriously at that time. We still continue this practice and for a number of years have in addition, removed the appendix at the same operation.

Whether it is a case of "the egg before the chicken, or the chicken before the egg," I am not here arguing, but all surgeons who have had any considerable experience in dealing with chronic ulcer of the stomach will testify that a diseased gall-bladder and pancreas, with "cobwebs" in the upper abdomen and a diseased appendix are the usual findings at operation in such cases.

In view of our newer concepts of the pathology of digestive disorders, gastric ulcer, cholecystitis and appendicitis are to be regarded as terminal infections. If this teaching holds, and it is perfectly rational, we must regard gastric and duodenal ulcer in the same light in which we have long considered gall-stones: that is to say, not as a disease but as the end result of a disease; and in order to cope wth the symptoms sucessfully, we must remove the original source of the infection and the lesions which it has produced. Your personal experience must have taught the inestimable value of removing one of these metastatic infections.

Who among us has not witnessed the beneficial results to the dyspeptic following removal of a small, contracted, thick gall-bladder? Who among us has not had the humiliating experience of seeing the tide turned in a patient's health by a neighboring *confrere* who removed a strawberry gall-bladder, or a chronically inflamed appendix after a technically perfect gastro-jejunostomy performed by us had failed to relieve the symptoms?

Fifteen years ago we were resecting the anterior cervical glands for secondary infection quite frequently. We soon learned that to remove the infected tonsils at the same time brought infintely better end results. We are doing less and less of this type of work, for the reason that the laryngologist is removing the infected tonsils before the local process breaks down the systemic resistance and permits invasion of the lymphatics draining the tonsillar region, and this is the lesson I wish to drive home in this section in connection with the management of digestive disorders. We must bring the profession to a full realization of the dangers of permitting pus to remain unchallenged anywhere in the system.

§ 4.

I can not leave the subject of causation of digestive disorders without issuing a note of warning. Hitherto our ideas of it had their origin in the operating theatre; today we are giving a ready ear to the deductions of the laboratory worker who says that ulcer and other lesions influencing digestion will not remain cured after operation if the original infection is not removed.

This statement from the laboratory must not be taken at full face value. Have not all surgeons of experience seen innumerable patients obtain complete and enduring relief following the removal of a diseased gall-bladder or appendix; and ulcer symptoms entirely disappear, never to return during the post-operative history of the patient, following appropriate surgical procedures prior to this day of our newer concept of the pathology of these several conditions?

I am not here inveighing against the soundness of the theory of the infectious origin of ulcer and allied pathological phenomena. Indeed, I have long believed and taught that ulcer was due to septic thrombophlebitis of the vessels of the stomach wall. The theory is not wholly new, as may be inferred from what COPELAND said more than a century ago. He taught that ulcer was due to a hardening of the arteries of the stomach. We now know that arteriosclerosis is due to infection. Embolism of an artery supplying a certain area of the wall is very constantly followed by ulcer, but it would

seem from clinical observations that the general condition of the patient which induced thrombus formation had much to do with the future history of an ulcer produced in this manner. Ulcer artificially induced in animals heals readily unless the animal has been much reduced in health by cold, starvation or loss of blood. Finally, LEUTULLE, SIDNEY MARTIN and others long ago suggested that gastric ulcer is due to necrosis from bacterial influences.

§ 5.

After a generous experience in stomach surgery, extending over a period of years, I am fully convinced that 70 per cent. of the patients suffering from digestive disorders may be cured by removal of some extra-gastric pathological lesion. It therefore becomes incumbent upon the physician and his consultant, the surgeon, to ferret out the source of the disorder; for instance, an overloaded colon, infection of the appendix, pancreas, gall-bladder, gums, sinuses, or tonsil.

Unfortunately the physician and surgeon are not consulted by the vast majority of dyspeptics until they are suffering from terminal lesions, such as gall-stones, ulcer, hemorrhage or perforation.

The combined experience of a large number of surgeons shows that duodenal ulcer occurs practically three times as often as gastric ulcer, and that twice as many men as women are afflicted; furthermore, that while perforation takes place more frequently in duodenal ulcer, it is less dangerous to life, owing to the relatively more sterile contents of the duodenum and the comparative frequency with which the perforation becomes sealed by a tag of omentum, shortly after it occurs.

In the majority of instances, protective adhesions form prior to perforation, if the ulcer is situated in the posteror wall or lesser curvature. The stomach wall becomes adherent to the pancreas or left lobe of the liver and in some cases one finds the perforation effectually sealed by a tag of omentum. Abscess formation in the lesser peritoneal cavity with perforation into the pleura, a bronchus or the pericardium may follow ulcer perforation in the posterior wall of the stomach. The anterior surface of the stomach is comparatively free and perforation in this locality is usually followed by a peritonitis with intense general abdominal pain, nausea, vomiting and rigidity of the entire abdominal wall.

I have reported elsewhere cases of ulcers perforating the anterior wall and the opening found closed by adhesions between the stomach and left lobe of the liver; and in some cases the stomach wall was adherent to the anterior abdominal wall, preventing leakage of the stomach contents. In those cases of perforation with the stomach attached to the anterior wall of the abdomen, I have found considerable erosion of the abdominal wall, due to the influence of the gastric juice. It may be a mere coincidence, but I have not encountered erosion of the liver at the site of the perforation and coherent stomach wall.

§ 6.

Aside from digestive disorders and loss of wage-earning capacity, hemorrhage and carcinoma in gastric ulcer and hemorrhage and perforation in duodenal ulcer constantly menace the patient's existence.

Gastric motility and the secretory functions of the stomach are generally not so seriously disturbed in patients suffering from duodenal ulcer. Very satisfactory results are obtained by turning in the margins of the ulcer and reinforcing the wall by two tiers of sero-muscular sutures in conjunction with a gastro-jejunostomy. Conversely, this procedure will not relieve the digestive disturbances accompanying gastric ulcer which has perforated, if there is any considerable amount of induration about the base of the ulcer, and this is the only type of ulcer which I have encountered where perforation has occurred.

In dealing with perforation in this type of ulcer, I have made it a practice to resect the ulcer site well beyond the diseased margins, and suturing, do a gastro-jejunostomy at the same operation if the patient's condition would permit. Results, however, have not been satisfactory in a number of patients thus operated upon. A certain percentage of these patients have required a secnd operation, such as drainage or removal of a diseased gall-bladder, before obtaining relief from their symptoms. BALFOUR,[1] who employed the actual cautery in dealing with chronic indurated ulcer of the stomach, reports good results following this method.

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[1] DONALD C. BALFOUR, Surg., Gyn. and Obstet., *19*, 528 (1914).

Impaired motility and faulty secretory function on the part of the stomach, which persist in some degree after resection of the ulcer, have led surgeons to make the so-called "sleeve resection" of the stomach wall in dealing with chronic indurated ulcer. After an end to end anastomosis of the two edges of the stomach wall, the operation is completed by an anastomosis with the jejunum either at the site of the lower angle of the resection incision or with the proximal margin of the stomach. This operation interferes little with gastric motility, and in consequence is followed by infintely better end resuts.

§ 7.

In dealing with ulcer which has perforated, remember the admonition of MACBETH, "If it must be done, 'twere well that it be done quickly." The mortality following perforation increases by leaps and bounds after the first few hours. In no other field in the entire domain of operative surgery are keen judgment and celerity of greater value than in the technical management of a patient with a perforated ulcer of the stomach or duodenum.

The thick indurated mass usually associated with chronic pre-pyloric ulcer should be removed after a primary gastro-jejunostomy.

Tumors of the pylorus due to sclerosis differ in no way in physical appearance from those due to malignancy, the same is true concerning lymph involvement following sepsis and malignancy, unless we wait for metastases in the left supraclavicular, axillary and inguinal regions, but these are the signs of death, and the diagnosis may be made without opening the abdomen. The better practice is to make a two stage operation, as these patients are in such poor condition from prolonged starvation that their resistance is badly shattered, and they are poor surgical risks.

Recovery from starvation takes place very rapidly after gastro-jejunostomy and patients soon recover sufficient health and strength to undergo resection safely. Occasionally one finds at the second operation that the enlarged glands and the mass which was in the pylorus at the time of the first operation have entirely disappeared; in such instances the second operation should be terminated as an exploration.

The type of case under discussion has baffled surgeons of extensive experience in dealing with stomach lesions, and while you may not agree with the practice here advocated, you surely will concede that it is utterly impossible to differentiate, even with your fingers on the tumor, between a mass due to chronic inflammation and one due to malignancy at a time when operation for cancer would be of any value to the patient.

§ 8.

Hemorrhage is a calamity which is encountered in both duodenal and gastric ulcer cases. In the early days of the present era of surgery of the stomach we were advised in case the hemorrhage was severe to do what a classmate of mine advised in answer to the question, "What would you do in case of post-partum hemorrhage?" Answer, "Cut down and ligate the vessel." The mortality of operation for hemorrhage from gastric ulcer was near the hundred per cent. mark. Furthermore, ligation did not stop the bleeding in those that survived, and the operation was speedily abandoned. Many of these patients bleed severely within a few hours, but very rarely does a patient succumb to a primary attack.

The administration of two gramme doses of calcium chloride internally and the hypodermatic use of horse serum will materially assist in tiding these cases over to a time when an interval operation may be performed successfully.

The great discrepancy between the size of the ulcer found at operation or autopsy and the enormous quantity of blood lost by the patient has ever been a source of wonderment to the clinician. With the stomach laid wide open and drawn taut across the hand and a stream of tap water playng upon the mucous surface, I have spent several minutes in locating a small single ulcer in the stomach wall of a patient dead of hemorrhage. MAYO, in an excellent paper presented at the meeting of the American Medical Association last year, said that these extensive hemorrhages were gastro-toxic in origin, that is, due to gastro-intestinal or hepatic poisoning, and this is the only satisfactory explanation which I have heard that will account for those extensive hemorrhages from the stomach in which a single small ulcer is found at subsequent operation or autopsy.

Perigastric adhesions situated about the pylorus, like all newly formed tissue, are prone to undergo contraction in the course of time and this is not infrequently the source of obstinate, obstructive disturbances in the stomach. If the

adhesions are firm and can not be readily separated, I prefer to deal with them by providing ample drainage for the stomach in preference to making extensive lacerations and leaving large raw surfaces to be covered by omental grafts.

Ordinarily speaking, patients who have many adhesions following peritoneal infection will produce two adhesions for each one the surgeon "breaks up," and these new ones will go through the various stages of scar formation with a consequent return of the gastric symptoms.

In the greater number of instances adhesions are induced by ulcer, and not infrequently one will encounter the crater of an old ulcer perforation in the course of dissection which will necessitate an entire change in plan of operative procedure; therefore it may be upon the selection of a suitable type of operation for the case in hand that success or failure will depend. Separating adhesions is but temporizing, at best, and in the vast majority of instances the patient will not derive permanent benefit. Indeed, it is this unhappy choice of operation unsuited to a given case which has done more to discredit surgery of the stomach than have our errors in diagnosis.

§ 9.

My experience in gastric tetany has been limited to a single patient, an unmarried lady, whose chief complaint when I saw her was that she could not open her jaws. She had had dyspepsia for a number of years, with food retention and sour stomach. After getting her jaws separated, we obtained a large quantity of stagnant stomach contents, including partially digested food which she had eaten several days previously. She developed painful spastic contractions of numerous groups of muscles during the course of her treatment and the obstructive symptoms persisted, although no lesion of the stomach was demonstrable at operation. Complete relief of the tetany symptoms followed a gastro-jejunostomy, but she has had occasional stomach attacks during the subsequent nine years.

Operation for the relief of pyloric stenosis in infants at my hands has been followed by most happy results. In a case of this type recently, controlled by Roentgenograms, none of the barium in suspension passed through the pylorus. The patient, a boy of seven years, is healthy and normal in weight and mentality.

§ 10.

My experience in dealing with cancer of the stomach has been very discouraging. Patients receiving treatment of ulcers are very appreciative and present themselves for inspection occasionally, but patients with cancer appear to take a morbid pleasure in hiding and becoming lost to view shortly after leaving the hospital. I have a recent report from a man whose stomach I resected seven years ago, since which time he states that he has been free from gastric symptoms but is failing in general health; three other cases ranging from two to three and one-half years after operation, and two cases still in the hospital, constitute the list "accounted for," and I regret to relate that the "unaccounted for" list would show somewhat over 90 per cent. as the combined immediate mortality rate and death within the six months following operation.

Such reports as the above do not incline to promote enthusiasm on the part of the internist to refer these patients to the surgeon; but when one recalls that scarcely more than a decade ago a learned surgeon, writing of operation for cancer of the stomach, said, "Is not the victim asked in effect whether he will make the journey to Tyburn by the way of Maiden Lane or Piccadilly?" one feels encouraged to continue on the only path in the treatment of these cases which has either prolonged the life or given a shadow of hope to the sufferer.

While the incidence of frequency with which cancer begins in the margin of unhealed ulcer is variously estimated as from three to one hundred per cent., the truth will perhaps be found by the laboratory worker in this field to be somewhere between the two extremes.

Last year I presented before this society a patient and a photomicrograph of his tumor wherein neither the resected portion of the stomach nor the pylorus showed scar formation in the mucosa. A malignant tumor as large as a pecan, having its origin in the mucosa lining the pyloric ring, had caused the obstructive symptoms, which had continued to increase in severity for six months previous to the patient's admission to the hospital. The surface of the mucous membrane covering the tumor was

smooth and differed in no way in its gross appearance from normal mucous membrane. No history of gastric disorder previous to the present attack could be obtained.

Another patient upon whom I operated for cancer had been free from stomach symptoms until four months previous to admission. Operation revealed a large saddle-shaped cancer occupying the greater portion of the lesser curvature.

Mention of these cases is made because they are the only patients upon whom I have operated for cancer of the stomach who have not given a history of long standing ulcer. It has been said by competent authority that gastro-jejunostomy, when done for the relief of benign ulcer, tends to prevent subsequent development of malignancy and that the same operative procedure will not only prolong life and render more comfortable the inoperable cancer cases but will also inhibit the progress of the malignant neoplasm.

I have had a number of cases in which resection for perforation of a clinically benign ulcer was followed by a cancer within the succeeding year or fifteen months. In one such instance the malignant growth was located in the stomach wall at the site of the anastomosis made for the relief of a large perforated, calloused ulcer situated in the anterior wall well to the left of Hartman's line. The primary operation, resection and gastro-jejunostomy, had been performed one year previously. The second operation, which was but an exploration, showed that the pyloric end of the stomach, including the site of the gastro-jejunostomy, was comprised in a tumor the size of an orange and there were enlarged glands in the gastro-hepatic and gastro-colic omentum immediately contiguous with the tumor. The scar and stomach wall at the site of the resected ulcer showed no evidence of malignancy at the second operation.

§ 11.

The last phase in considering the management of the surgical disorders of digestion arising from the stomach itself comprises the prevention of cancer. One-third of all cancers occurring in man are located in the stomach: and the vast majority of these neoplasms originate in the margin of an unhealed gastric ulcer. He who recognizes this and deals radically with the ulcer before malignacy has begun will prevent untold suffering and add much to the sum total of human life and happiness.

Discussion.

DR. CHARLES A. L. REED, Cincinnati:

I esteem it a privilege to be called upon to open the discussion of a paper which has been so carefully prepared as the one to which we have just listened. This most important subject has been treated in a manner so complete and so comprehensive that we are brought thoroughly abreast with the most modern thought on the question.

As the paper was being read, I was impressed with the idea that we are called upon to contemplate two phases of the subject—the etiologic and the sequential. The teachings and demonstrations of ROSENOW are to my mind most conclusive. It has lately fallen to my lot to have certain analogous experiences in my studies of another infection, to which I shall not make further allusion on this occasion.

The central fact lying back of the observations of ROSENOW is that certain forms of infection, certain strains of streptococcus, for instance, exercise a selective action in their terminal effects. I suppose that no principle of causation has received more general recognition than this one of selective action. Why does the pneumococcus attack the lung? Why does the tetanus bacillus attack the motor areas? Why do certain other bacteria attack certain other centers or localities? There are various of these forms with which we have long been familiar. When ROSENOW experimentally inoculates with a strain of bacteria, such as a strain of streptococci from a case of gastric ulcer, and produces gastric ulcer by throwing this particular organism into the veins of animals, he simply furnishes another example of selective action.

There are certain phases of pathological change that must be taken into account in the therapy of these cases. You may have a primary ulceration without great obstruction. Let us assume that the case comes under observation at this particlar stage; that the focus of infection is located, the stream of intake is stopped and the natural immunizing powers of the human system have asserted themselves. With the eradication of the infecting strain, the normal resistance has a chance to assert itself.

It is in such instances that the internist, basing his treatment upon these modern views, has achieved his best results. However, in many cases, I think it is the lot of both surgeon and internist to see these patients after the deeper and more profound changes have taken place. There may be perforation; there may be obstruction, or there may be duodenal ulcer with resulting adhesions, any one of which conditions may be held responsible for interference with the function of the organ and its associated organs.

There is much to be said about the association of organs which are to a certain extent reciprocal in the exercise of their functions. In this particular class of cases, we are obviously called upon to deal with established pathological changes which can be met only by surgical intervention. Let us assume that this intervention has been practically and surgically successful. You have broken up the adhesions, you have done an anastomosis, but you have not corrected the primary focus of infection; therefore, that infection is likely to go on and ulceration to recur, simply because the etiological factor has been undisturbed.

It is perfectly evident in the essay presented to-night that the whole question of gastric ulcer is a special infection, with a sequential special infection to be dealt with at various distant points. It calls for the keenest discrimination on the part of the physician or surgeon in charge, to determine just what particular line of treatment to follow. In this connection I am reminded of a circumstance at the Surgical Congress at Chicago. I was sitting by Sir ARBUTHNOT LANE. Some one of our colleagues, reading a paper on gastro-enterostomy, suddenly turned and said, "What beastly operations these people are doing!" I said, "Why?" to which he replied, "They are neglecting the cause, which is to be found in the physiological drainage of the tract lower down." This is undoubtedly true in cases in which the absence of drainage may serve as the cause of stasis or of primary infection from any of the pathogenic flora of the intestinal canal which may serve by selective action to determine the exact nature of the lesion at the pylorus.

I do not think that we are to accept as final the fact that the only atria of infection are to be found in the tonsils or about the teeth It is true that infections here are frequent, but they are by no means the only gateways of invasion. Nor are we to ignore the dictum of LANE, although his emphasis has probably led to the misapprehension that he also proposes to promulgate his theory as the one that answers all cases. We must recognize the underlying factor and deal with results as we find them, and that fact has been very admirably presented in the essay I have been called upon to discuss.

DR. W. H. BETTMANN, Cincinnati:

I think all have enjoyed this paper. It leads, however, inevitably to a certain confusion of thought regarding pathological problems. ROSENOW'S conclusions seem to me to need confirmation in the human subject. For one thing, they are entirely too easy. Bad teeth and tonsils infect the blood; the infection is carried to the stomach or duodenum and there sets up an ulcerative process which becomes chronic. So far, so good. But now we are asked to believe that treatment of the original infecting focus will relieve the gastric lesion. This is like trying to cure a hole in a burnt cloth by putting out the fire which caused it. Then we are expected to believe that local treatment is apt to be vain so long as the original focus persists. This is contrary to the clinical experience of the past, when countless gastric ulcers were relieved and cured without any thought of the tonsils and teeth. And finally comes the enthusiastic surgeon, following LANE, who tells us that removing the original focus is all right, and making a gastro-enterostomy is also commendable, but good results may not follow unless we make drainage operations on the gall bladder, or worse, do a short-circuiting operation on the colon. This, to say the least, is confusing and not helpful. If these theories of pathology are corect, how is it that patients with duodenal ulcer get complete relief from a correct diet, and remain permanently comfortable with diet and alkalies?

It is a very advanced but rather off-hand thing to say, as the esasyist has done, that arteriosclerosis is always the result of infection. Why, then, is arteriosclerosis not produced in the young when infection is most prevalent? Why does it occur usually at an age when the tonsils are long since shrivelled and often the teeth removed? Do alcoholism, syphilis, worry, hard labor, play no role in arteriosclerosis? If they do, then to say that arteriosclerosis is always due to infection is a meaningless statement. The most we can say is that arteriosclerosis can not fully develop without infection.

DR. HAINES gave a very complete and interesting description of the various operations and their indications. But we must not for a moment allow ourselves to believe that a well-planned and well-executed operation always ends the patient's clinical history. Far from it. A so-called strawberry gall bladder is opened and drained and the patient recovers. These patients often remain well, but often they do not. One of my patients who had incipient phthisis went West a few years ago, but slight fever and symptoms of indigestion persisted. She went to Rochester, had a strawberry gall bladder drained, and was relieved of the fever and the indigestion. She went home and after eight months has a return of her phthisis, her fever and her indigestion. There are many similar cases.

Gastro-enterostomy, as is well known, fails to cure patients permanently in a rather large percentage of cases. During the past two years I have, with the help of DR. GREENEBAUM, taken a

record of the previous histories of all my new private patients. In looking over these records to-day, I find 146 patients who have had their abdomens opened prior to coming to me for abdominal symptoms. This is rather a formidable number in two years, and I shall report them in detail at some future time.

I do not wish to minimize the vast blessings which have come to our dyspeptic patients from proper surgical interference. But it should not be forgotten that even "successful" operations do not always cure, and that many patients are worse off after the operation than they were before.

DR. J. EDW. PIRRUNG, Cincinnati:

I have nothing to add to the discussion, but I wish to express my appreciation of the very thorough and careful way in which the essayist has covered this subject. He has called our attention to some of the newer studies in infection with reference to their relationship to the etiology of gastric ulcer.

I would like to say that one of the reasons why surgeons can not offer better end results in the treatment of cancer is that the internist, who invariably sees these cases first, keeps them until their condition is practically hopeless, before he sends them to the surgeon. In order that we shall have better end results in gastric ulcer, in duodenal ulcer and in cancer, there must be a closer relationship established between the internist and the surgeon. We must have an opportunity to see these cases of precancerous lesions earlier, and they should have earlier operation.

DR. B. M. RICKETTS, Cincinnati:

I want to thank DR. HAINES and DR. REED for their able discussion of this subject. There are two things which it occurs to me to mention in this connection. We are constantly hearing of infected teeth and infected tonsils, but we hear nothing of the vagina, the urethra, and infections in other parts of the body. If it is necessary to examine the teeth, the tonsils, the nose and the upper air passages in our search for foci of infection, then it becomes equally necessary to examine the vagina and the urethra for the same purpose.

With reference to draining, it is taken for granted that we do not operate upon the stomach and the intestines for any other purpose than for drainage. Just as we may have an ulcer of a tooth, so we may have an ulcer of the stomach, the condition demanding duodenostomy as the sequel. We may have stenosis of the pylorus, just as we may have it in any other canal. Drainage is the *sine qua non* of surgery.

If you will permit, Mr. President, I will give the history of a case I saw recently. A woman, fifty years old, had had stenosis for thirty years. She was very much emaciated, and could not swallow even a drink of water. At the time she was sent in from the country, her fingers were blue, and the symptoms such that a certain amount of preparatory treatment was necessary before submitting her to operation. We then did a gastro-jejunostomy. A little later she took a half gallon of milk, can now feed herself, and physically is greatly improved. She is still, however, a nervous wreck, and will in all probability continue so.

So far as the improvement in the digestive tract in general is concerned, we all know what that means. Some are cured and some are not. No man knows so well just what the condition of the stomach is as the man who opens the abdomen and examines it.

DR. E. W. MITCHELL, Cincinnati:

I think the two sides of this question have been fairly and thoroughly presented, the surgical by DR. HAINES, the medical by DR. BETTMANN. I have been feeling very grateful to our bacteriological and surgical colleagues for making the practice of medicine so very easy. Now, when a patient comes to us, we take out his tonsils. If this fails to cure, we next try removing the teeth. If again we fail, we are to remove six or eight feet of the large intestine. Some patients do not get well with all of this.

If a patient has a focus of infection, it ought to be taken care of, whether it be in the tonsils, the teeth, or some other locality. I think that DR. BETTMANN has very clearly pointed out how illogical it is to expect that by removing an old focus of infection, we may cure a disease existing long after the infection coming from the original focus has ceased. It seems to me that to determine whether these cases shall be sent to the medical man or the surgeon is a rather difficult problem to solve, and should be decided in the individual case only after thorough examination and a course of proper medical treatment.

I am meeting quite frequently on the streets of our city two patients whom I treated some two or three years ago, and to both of whom I explained the necessity of surgery of the intestines in order to relieve a most exaggerated displacement of stomach and intestines. One of these patients is to-day a hearty, healthy, rosy-cheeked young woman, and has made a very good recovery from her former condition. She was

recently happily married, and has also had some skillful medical treatment. The other, an elderly lady, has been made very comfortable by abdominal support, dieting and general medical treatment. I am well satisfied that these patients refused to have operations done.

I think, however, that internists overlook a great many cases that are surgical, and I am convinced that there should be a closer co-operation of the internist, the surgeon and the laboratory worker. It is only by this means that we shall be enabled to do the best for our patients.

I am becoming more and more radical, I think, on the question of early operation in cases of stenosis of the pylorus in infants. Where there is vomiting, the presence of peristaltic waves, with possibly a tumor, I think there should be very early surgery. I am more convinced of this fact since surgeons recently have been getting better results than they did a few years ago. The mortality in the hands of good surgeons is now lower than in those cases which rely solely upon medical treatment for relief. Therefore, I am now making it a rule that in those cases which are characteristic, and which do not improve promptly, the patients shall be taken to the surgeon before they become so greatly emaciated and reduced in vitality that the operation involves great hazard.

DR. GEORGE B. ORR, Cincinnati:

My friend, Dr. Haines, has given us an exhaustive paper, as he always does, and in connection therewith I want to relate a little incident of the past, as a means of putting the surgeon on his guard when it comes to rendering a diagnosis from the pathological standpoint.

In August, 1869, before the theory of germs had been introduced into medicine, and while I was assistant at St. Mary's Hospital, a man of seventy presented himself for treatment. He was toothless, very ill, scarcely able to totter to the ward. His case interested me greatly; he was in much pain, with almost constant vomiting. I prescribed some Dover's powder for his relief. The next day, after making a very careful examination, the internists decided that he had gastritis. A staff surgeon declared that in spite of the fact that the cachexia was wanting, it could not possibly be other than cancer of the stomach, as he could feel hard masses with his fingers. The medical man suggested putting the patient on milk and lime water. The surgeon insisted that nothing would afford relief. I was in quite a quandary, but while we were trying to settle upon some plan of procedure, the old man closed his eyes in his final sleep. An autopsy was held, the stomach was removed and opened, and from it we took a double handful of peach stones.

We may never see another peach stone case, but it may be well, should any of you chance to have a gastric case in the month of August, to bear in mind that once upon a time an old man ate peaches, stones and all, and died without developing either a cancer or a focus of infection.

DR. W. D. HAINES, Cincinnati (closing):

I am certainly very grateful for the generous discussion which you have accorded my effort in presenting this subject. With reference to the theory of the causation of ulcer, I must admonish you that the presentation of the results of the laboratory worker are not only attractive but sound very reasonable and have been repeatedly checked up by those engaged in experimental work. Dr. Rosenow, recently told us, in a lecture delivered at the General Hospital in our city, that ulcer followed the intravenous injection of cultures in eighty per cent. of the cases. There are, no doubt, other causes which will induce ulcer, but as a clinician I am more interested in methods which will afford relief to our patients. The treatment of gastric or duodenal ulcer should differ in no way from the treatment of ulceration in any other part of the intestinal tract.

What does one do when called to see a patient suffering from typhoid, tuberculous or other ulcerative processes of the intestine? Does he suggest operation or does he put the patient to bed, correct his diet and meet the indications as they arise, meanwhile seeking the underlying cause and giving suitable remedies for its removal?

Laboratory experiments show that artificially induced ulcer will heal if the vitality of the animal has not been seriously impaired by exposure to cold, abstraction of blood, or some other enfeebling factor; and this should be an exceedingly good point for the internist in the management of ulcer cases.

It it when an ulcer perforates, or continues to bleed, or when the resultant adhesions with deforming contractions obstruct or delay the passage of food or feces despite treatment, that the surgery is demanded.

I have never advised operation nor operated for ulcer of the stomach or duodenum, except in the emergency of perforation, until after a fair trial of rest, proper feeding and medication had been given. The internist says that many of these patients return to him in the course of six months or a year with all the symptoms which they had prior to operation, and in some instances the patients are more uncomfortable than they were

before operation. This is undoubtedly true, but it should not be charged to surgery of the stomach in general; rather let us say that in a certain percentage the failures are due to lack of selection of the proper type of operation for the individual case, but in the vast majority of instances failure is due, as brought out in my paper, to overlooking a diseased appendix or gall bladder at the time of primary operation.

You will pardon me for again calling your attention to the importance of ever bearing in mind the intimate functional relationship of the organs of the digestive group. This is, I think, the fundamental principle underlying surgery of the stomach, and those who fully comprehend its importance will accomplish most for the relief of the patient in the management of ulcer cases.

As has been well said by one of the speakers, the profession must work together in order to promote the welfare of ulcer cases. The surgeon should be fully advised of the antecedent conditions in the patient's history, including the duration of his illness and the measures which have been instituted for relief, together with the degree of success or failure which followed; thus and thus only may we decide when ulcer cases cease to be medical and should be referred for operation.

WALKING AS AN EXERCISE.

I. O. Allen, M.D.,

BROOKVILLE, INDIANA.

WALKING is generally acknowledged as the best of exercise. The truth of the matter is, that walking is sometimes the best of exercise. For the feeble and the aged walking is undoubtedly the best single exercise, but for the more robust it is a tame affair. The robust may walk for hours, in easy shoes, with little inconvenience and little benefit; while the feeble may quickly tire, and receive much benefit from a very short walk if the shoes are easy. A short walk for the feeble is the equivalent of a long trot or a short run for the robust.

Let the feeble walk slowly for a short distance, increasing the distance day by day as the powers increase. Finally, when long walks seem inadequate, the pace may be increased to a jog, a trot, or even a run.

For building lung power probably nothing excels lively leg work. A little of this will go a long way as an oxidizing process; but care should be employed that the work cease when breathing is sufficiently accelerated, to be resumed if so desired after the breathing has subsided to near the normal. For the robust who wish to get quick returns for the time spent in exercise, *lively* leg work, properly guarded, is undoubtedly the best form of exercise.

Walking, trotting and running are not popular as exercise mainly because of poor feet. One may as well expect to get satisfactory results by sitting on a tack, as from walking or running when the feet are pinched or crowded into shoes that are too snug. *Foot comfort is absolutely necessary* if pleasure and benefit are to be derived from walking. Whenever anyone complains of aching or weak feet, or of inability to walk far, it is pretty certain that there is an error in shape or size of shoes.

It has been accepted that the knee should point directly over the big toe when walking; but traveling will be much easier if the knee bends over the little toe, and the spring is taken from the head of its contiguous metatarsal bone. This position tends to make the traveler a little pigeon-toed, but with the spine erect and the body inclined forward from the heads of the femurs, speed and endurance are assured if the toes are allowed to spread well.

"Spread well shoes" (not yet created) with assumption of the easy attitude just mentioned and backed by a healthy sentiment, will put civilized people on their feet again and give them a taste of the real joys of living.

It is not strange that degeneration stalks in our midst when our civilization has well-nigh given up all hope of pleasure in the "hike" to the woods or the country. A sound foot, a roomy shoe, and correct attitude makes walking a beneficial and an almost tireless exercise. The good feet, legs and wind secured through exercise of the legs make an excellent foundation for the good back, arms and shoulders; and these all together make the finest of foundations for a superior mind.

The fact that the majority of deaths of physicians as announced in the daily press is due to heart disease is a sad commentary on the way medical men neglect themselves in the storm and stress of daily practice.

Editorial

SPITTING ON THE CONFLAGRATION.

WE publish in these paragraphs the text of a bill on criminology (S. 4,900 and H. R. 8,820), which has been introduced in the Senate by Mr. Joseph T. Robinson and in the House by Mr. Joseph Taggart. The purpose of this bill is the establishment of a bureau for the study of the criminal, pauper and defective classes of our country. It has been reported favorably by the Judiciary Committees of both Houses of Congress and has received the unqualified endorsement of practically every national and State medical society, the American Bar Association, the churches, various social agencies, etc. Similar bureaus are existent not only in all the civilized countries of Europe, but even in those to which that adjective is not so commonly applied.

There has been no mean attempt made by national, state, county and city governments in these United States to meet the problems of pauperism, of crime, of feeblemindedness, etc., *after* these troubles have declared themselves in unmistakable terms to the great public. The State of Ohio alone, for example, has twenty-five millions invested in institutions to care for them, and exclusive of the large contributions made from counties, cities, etc., itself spends five millions per year in looking after the unfortunates in these asylums. The Robinson-Taggart Bill printed herewith is designed as an attempt toward the discovery of the causes which produce these social problems, with the end in view of their *prevention*. At the present moment, practically nothing national in type, and comparatively little of state or private type is being done in these directions. It requires, of course, a better imagination and more brains to appreciate the advantages of prevention over those of attempts at cure. With such facts in mind, one wonders how the Robinson-Taggart bill can have sojourned so long in the halls of Congress without being passed.

We naturally recommend that this become a law at as early a date as possible. In doing so we can not, however, completely suppress our smiles over some of the details in the bill. If this bill acomplishes ever so little it is likely to save millions to the country. But to make it do so, some expert thought and action will be required and for the government to be hunting this with a three-thousand-dollar tip to the chief and a two-thousand-dollar one to a psychologist—who even to qualify as a psychologist must be an adult and have spent several years in more than ordinary university training—is more characteristic of our democratic ways of doing things than laudable. And, so far as adequacy to the task is concerned, five thousand dollars for "temporary employment of specialists," for rent, "instruments of precision, books and periodicals," is verily like spitting on a conflagration to put it out.

A BILL (S. 4,990 and H. R. 8,820):

To establish a bureau for the study of the criminal, pauper, and defective classes.

Be it enacted, etc., That there shall be established in the Department of Justice a bureau for the study of the abnormal classes, and the work shall include both laboratory investigations and the collection of sociological and pathological data, especially such as may be found in institutions for the criminal, pauper, and defective classes. Said bureau and work shall be in charge of a director, who shall be appointed by the President, by and with the advice and consent of the Senate, and shall receive a salary of $3,000 per annum. He shall make report once a year, directed to the Attorney-General, which, with the approval of that officer, shall be published. For the aid of the director there shall be one psychologist at $2,000 per annum, one translator at $1,400 per annum, two clerks at $1,200 each, and one stenographer and typewriter at $,1000.

Sec. 2. That the director, if necessary for the proper discharge of his duties, may place himself in communication with State and municipal and other officials of this and other countries.

Sec. 3. That for the proper equipment of and carrying on the work of said bureau, the temporary employment of specialists, and the purchase of instruments of precision, books, and periodicals, and rental of rooms, if necessary, there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of $5,000, or so much thereof as may be required.

Letters

To the Editors:

DOCTORS in the Twenty-Second Ward have been expecting a reply to Dr. Vos' declaration that I said that physicians in that ward were reporting all cases of sore throat as cases of diphtheria.

Dr. Vos' reply to your editorial, "Can a Community Protect Itself Against a Physician?" very naturally suggests a number of questions. Bringing a series of indefinite charges against other people has never been considered a legitimate defense in a court of law. What physicians have torn down infectious disease placards in the past? What physicians have boasted publicly of not having reported cases of true diphtheria? What physicians have deceived the Department of Health and jeopardized the lives of children by submitting cultures from their own throats? What physicians are "giving only a few drops of antitoxin to the patien as is being done daily?" Did he report these men to the Department?

Dr. Vos has indicted the entire profession of this city. Let him give us the names—and the proof. His failure to report a series of violations of law, violations that endanger the heallh and lives of our citizens, places him in a position in which he will have considerable difficulty in explaining his attitude towards the public he serves.

Webster defines "infeasable" as 'not capable of being done or accomplished, "impracticable." Applied to "rights" the word leaves little for any one to fight over and I am not inclined to enter into any controversy with any one over something he brands in advance as "infeasable."

Four months ago the local health officer informed Dr. Vos that many cases of diphtheria were discovered by laboratory methods that could not be diagnosed clinically and that many of the best men in the city were submitting cultures from "sore throats" as a routine procedure for laboratory examination. They are not submitted with the diagnosis of diphtheria, but with a request for the laboratory findings. This procedure is in strict accordance with the Safety-First campaign and will save lives.

Dr. Vos denies the value of serum therapy. It may be pertinent to ask why he purchased ten thousand units of diphtheria antitoxin on March 14, and an additional five thousand on March 21.

Are these purchases to be considered as evidence of his "courage to dissent from the use and practice of a serum therapy," or is it his method of demonstrating (to quote his own words) "that I have allowed my mind to expand beyond the conventional and commonplace?"

J. H. Landis,
Health Officer of Cincinnati.

New Books

Bone-Graft Surgery. By Fred H. Albee, a.b., m.d., f.a.c.s. xiii + 417 pages, 8vo, with 332 illustrations W. B. Saunders Company, Philadelphia, 1915. Cloth, $6.00; half morocco, $7.50.

TO THOSE especially interested in the operative treatment of fractures and other lesions of the bony framework of the body, the recently published work of Albee on "Bone-Graft Surgery" comes very opportuntely as a practical exponent of the technique as carried out by a master in this interesting and difficult field of surgery.

To one who has had the privilege of seeing Albee's work, a realization comes of the fact that much of the success of his work lies in the mechnical skill and ingennity of the individual. To comparatively few, at least not without any trials and disappointments, will it be permitted to attain to such a degree of proficiency.

For this reason it is much to be feared that many seeing how easy it is to see "Aunt Debby spin," may be tempted to try it themselves, and the consequence will be a repetition of the long list of disasters that followed in the wake of Lane's advocacy of the steel plate in the repair of fractures.

Growing dissatisfaction with the results of the treatment of fractures by means of metallic plates has led to the use of transplanted bone, to the end that osteogenesis may be encouraged, and a viable homogeneous tissue substitued for a non-absorbable foreign body.

It is with the purpose of showing to what various uses such transplants may be successfully applied that Albee's book has been written.

To those interested in this field of work, this book will prove a mine of practical information.

The success which has attended his efforts in the splinting of the spine in Pott's disease, and in paralytic scoliosisis is by this time familiar to us all.

To Ollier he has with justice given credit for calling attention to the merits of the autogenous bone graft, and the desirability of preserving in such grafts the periosteum.

The comparative value of autogenous, homoplastic, and heteroplastic graft is considered together with the question of viability.

Having shown the desirability of employing wherever available, the fresh autogenous graft, he concludes, "Autogenous live bone is the only material which can be implanted with safety in a bed free of periosteum."

As to viability, he says on a previous page, "Just what happens to the autogenous bone graft from a microscopical standpoint, is still a matter of discussion. Whether the bone graft lives as such, or

whether the cells wander into it from the bone with which it is connected, is still *sub judice.*" (Sic.)

Later, he most aptly states, "It fortunately does not matter, from a surgical standpoint, what happens histologically, so far as the exact role of the graft is concerned. It is known that an autogenous bone graft always "takes" and becomes permanent, if it is put in under aseptic conditions; and, if it has function to perform, it stays there, and adapts itself in structure, size, contour, and in strength to the new environment."

In his chapter on the bone graft, as applied to the treatment of fractures, a timely warning is given. "A plea, however, should be made for caution against the too enthusiastic adoption of the open method of treatment as a routine means of dealing with simple fractures." HITZROT has well stated that: "The most striking contraindications to an open operation upon a broken bone, are inexperience on the part of the surgeon, unsuitable surroundings, and insufficient equipment. Furthermore the operators should have a thorough knowledge of the anatomy of the region to be operated upon, and should understand the physical function, *i. e.*, the physics of the muscles, ligaments, etc., involved in the injury. Such knowledge may prevent some of the glaring faults already existent in the treatment of broken bones."

Space will not permit the reviewer to consider seriatim, the many uses to which the bone graft has been applied in these pages. No less than eighteen indications are given. "As a prevention of slipping patella by raising the low femoral condyle by inserting a graft in the form of a wedge," may be instanced as the most ingenious and practical of the many recommendations.

On the other hand, the rather over-refined method of dealing with fracture of the patella will, I much fear, prove "caviare to the general."

But to conclude, ALBEE has given us a book, which no one doing bone surgery can afford to dispense with, and as a contribution to this interesting field of work is epoch-making. C. E. C.

Societies and Academies

ACADEMY OF MEDICINE, Cincinnati.

PERSONAL Experiences with Anoci-Association," were briefly related by DR. WALTER GRIESS, April 1. Without much preliminary discussion of the meaning of the term, he at once entered into a description of the methods in producing absence of pain in the area upon which he intended to operate.

He spoke of the advantages in blocking the field, among them being absence of pain, elimination of shock, retaining the consciousness of the patient, prevention of post-operative nausea and vomiting, conservation of the patient's nervous energy, rapid convalescence and absolute safety in so-called borderline cases. He employed less ether with the preliminary use of quinine-urea hydrochlorids. He had frequently done a double herniotomy with one ounce of ether for anesthesia. This, said DR. GRIESS, in itself justifies the use of "nerve blocking." In some cases he administers gas-oxygen, preceding the employment with a hypodermic of morphine, grain ¼, and atropin, grain 1/150. H. M. C. and scopolamin he had discarded, not because they were valueless, but in deference to the profession. He admitted that the almost uncanny quieting influence of the H. M. C. sometimes disconcerts the attendants. Dr. Griess said the best method to block the field of operation is to employ novocain and synthetic suprarenalin, always inserting the needle as a trocar and adjusting the syringe afterwards. The essayist insisted on the necessity of waiting at least five minutes before operation.

DR. RICKETTS could see no reason for pulmonary anesthesia in surgery. He always employed local anesthesia. He related how he had produced absence of painful impulse in the entire arm by injecting 1½ grains of novocain into the axillary space.

DR. RANSOHOFF said that anoci-association has been before the profession for some years. Those who have had most experience with it have given up its use. DR. RANSOHOFF declared that after all the most important factor in producing ease and poise in the patient was the surgeon himself. The success of the surgeon really depends on his powers of suggestion, plus his skill. He had found that when ether is administered local analgesia is unnecessary. DR. RANSOHOFF preferred gas-oxygen anesthesia, but it does not produce the profound relaxations of a general anesthetic.

DR. SALZER expressed the conviction that "anoci-association is an after-thought." In order to secure relaxation CRILE injected a solution of cocain; the entire subject of anoci-association was an afterthought of CRILE'S. DR. SALZER employed gas oxygen in combination with local anesthesia, but found patients were not materially helped thereby. Pain is not the only factor to consider in operation. The personal equation is very important. Some surgeons have much difficulty in quieting and gaining the confidence of the patients; others have none. DR. SALZER said the administration of morphine as a preliminary agent in all operations is a desideratum. Not the least of its good effects is that it stimulates respiration. Children should never be given nitrous oxid gas. Their lung capacity is much smaller in comparison with the adult. DR. SALZER warned the members against the use of nitrous oxid. It is a very dangerous agent.

Dr. Siegel agreed with the essayist that the amount of the anesthetic required is very much less under the anoci-association method. He agreed with the previous speaker in his assertion that in children the gas-oxygen must be employed with the utmost care. He said one favorable point in the method under discussion was that local anesthesia is always quicker and more profound when the solution is injected deeply into the muscles. Hence the best results are obtained in tall, robust, muscular subjects.

Dr. Crisler has used the anoci-association method for the past six years. He regards it favorably. Patients do become convalescent quicker when it is used; there is decidedly less shock.

Dr. Souther agreed with the essayist. He wanted merely to emphasize that the amount of relaxation under the use of the method under discussion was truly amazing. He could grasp the abdominal muscles and make a sack of the entire wall, so great is the relaxation produced.

WEST END MEDICAL SOCIETY.

"OSTEOMYELITIS" was the subject presented by Dr. W. D. Haines before the West End Medical Society, April 11. He said the disease was essentially an infection of the long bones. He had observed that the disease had a predilection for young boys. In eighty per cent. of the cases the active oganism causing osteomyelits is the staphylococcus pyogenes aureus. The epiphyseal joint was frequently involved but the shaft is chiefly the point of attack. Dr. Haines had never observed more than one bone affected at a time, but the literature mentions a few cases where this had occurred. The medullary canal is nearly always destroyed, the process extending through the canal and involving the diaphysis. The pain in the affected limb is excruciating. It must be differentiated from acute arthritis and from typhoid fever, and other general infections. Infantile paralysis in children must not be mistaken for osteomyelitis. Points to remember in osteomyelitis are the acute course, high fever with sometimes an initial chill, pain near the end of a long bone and nocturnal outcries. In two or three days a spindle-shaped swelling may be observed over the site of the infection. In few diseases attacking the human organsm is a prompt diagnosis so imperative. The treatment is essentially surgical. "Let the pus out." The chronic cases are often seen after fractures some days after reduction of displaced bones. Here is where the *x*-ray is of service.

Dr. Pirrung expressed the view that even if a mistake is made in opening up the shaft, the damage to the bone is not serious. It may be the means of saving life. Always trephine in case of doubt. He had found the *x*-ray of doubtful value.

Dr. Hagin reported a case in which he extracted almost the entire fibula because of extensive necrosis. To his surprise the entire fibula was later regenerated, an observation showing that periosteum does regenerate bone.

Dr. Goosmann said that the *x*-ray does not disclose any changes in osteomyelitis unless cancellous tissue has broken down.

Dr. Zwick said that the pathology of osteomyelitis is the pathology of bone abscess. There is a minute lesion at first, followed by a breaking down of cancellous tissue which permits the infection with the staphylococcus aureus.

Notes and News

LOCAL.

Dr. Wm. F. Reilly has removed to the Union Central Building.

At the meeting of the Homeopathic Lyceum, April 22, Dr. Ralph Reed read a paper on "Dementia Praecox."

Drs. Hugh W. MacMillan and R. C. Harkrader have moved to the Union Central Building.

Drs. Ravogli, E. O. Smith, McKenna and Ricketts will attend the sessions of the American Urological Association, at St. Louis, April 17-19.

"Surgery of the Seminal Vesicles", was the subject of the address by Dr. E. O. Smith before the Dayton Academy of Medicine, April 14.

Dr. Henry W. Bettmann will read a paper on "Medical Aspects and Diagnosis," before the American Gastro-Enterological Association, at the nineteenth annual meeting, Washington, May 8.

Drs. Dunham, Rockhill and Tuechter have been appointed to represent the Academy of Medicine in a preliminary inspection of the new tuberculosis hospital. Representatives from various civic and commercial bodies will join them.

"Some Important Factors in the Production of Oral, Facial and Mental Defects," will be the subject of the address by Dr. Weston A. Price, of Cleveland, at the next session of the Cincinnati Dental Society. The meeting will be held at McMicken Hall, Cincinnati University, at 8:00 P. M., April 21. The

subject will be illustrated with stereopticon slides and cinematographs. At 6 o'clock a dinner will be given at the Gibson in honor of Dr. Price, at $1.50 per plate. The medical profession is invited to both the dinner and the address at the University.

"The Truth About Preparedness" is the subject to be discussed at a mass meeting at Music Hall, April 15. The chief aim of the local committee in charge of arrangements is to furnish suitable auspices for the men of national prominence who will come here to lay before our city the many phases of this critical subject. Patriotic Americans would do well to ness, who wants it, who is to pay for it, how to take ness, who wants, who is to pay for it, how to take the profit out of it, etc., will be considered. The aim is to assist in securing a dispassionate discussion and inquiry. It would seem that of all men the members of the medical profession should be especially in evidence.

There is a vacancy in the position of attending junior medical staff at the Cincinnati General Hospital. The physician in this position serves in the capacity of visiting physician on the East Medical Service. The service is an alternating one of four months' duration, during which time it is his duty to make daily visits to the patients in the hospital. He is under the direction of and responsible to the senior staff officer. Any medical practitioner in Cincinnati may apply for this position. Applications may be obtained from the superintendent at the General Hospital, and must be filed with him prior to April 20, 1916.

CINCINNATI HOSPITAL INTERNESHIP.

Standing of candidates for interneship, Cincinnati General Hospital, Class of 1916-1917:

1.	Stark, J. H., U. of C.	94.50
2.	Lindenberger, L. N., U. of C.	91.00
3.	Knauf, A. R., Rush.	90.00
4.	Bieler, Henry G., U. of C.	87.25
5.	Geringer, A. C., U. of C.	87.00
6.	Luehre, L. E., Rush.	85.75
7.	Huerkamp, J. M., U. of C.	85.75
8.	Rosenbaum, Harold, Rush.	85.50
9.	Vance, W. K., Jr., U. of Virginia.	85.25
10.	Hauser, S. T., U. of C.	85.25
11.	Brown, Harold C., Atlanta.	85.00
12.	Burling, Wesley, U. of Illinois.	83.75
13.	Biern, Oscar B., U. of Virginia.	83.25
14.	Shank, Reed A., U. of C.	83.00
15.	Barnett, Edwin J., U. of Illinois.	82.75
16.	Smith, Lester A., Rush.	82.50
17.	Ruff, Julian, Atlanta.	82.25
18.	Eklund, Wm. J., Rush.	82.00
19.	Carothers, Ralph, U. of C.	82.00
20.	Ross, W. L., Jr., Rush.	80.75

ALTERNATES.

1.	Ramon, Henry B., U. of Illinois.	80.25
2.	Bourbon, R. P., U. of Illinois.	78.75
3.	Tompkins, C. R., Rush.	78.25
4.	Dassell, Margaret N., Eclectic.	78.00
5.	Glascock, Fred L., Rush.	78.00
6.	Rowe, Paul H., Rush.	77.50
7.	Schwartz, Albert, Eclectic.	76.75
8.	Ockerblad, Nelse T., U. of Kansas.	75.50
9.	Dubois, Chas. T., Rush.	71.25
10.	Rappaport, Benj., Rush.	70.75
11.	Huffman, Lester Dale, Indiana Univ.	70.25

GENERAL.

Pertussis is epidemic in Leavenworth, Kan. Several schools are closed.

Richmond, Ind., canines are muzzled these days. A number of dogs have been found to be in the last stages of rabies; hence the muzzling.

Up to March 27, twenty-five persons have died in Milwaukee from typhoid fever, since the beginning of the epidemic, January 1. At present 194 cases are being treated.

Convicted of accepting money to pass meat which was not above suspicion, two New York City men inspectors were dismissed from service by the Municipal Board of Health.

A reducton of nearly one thousand deaths in Wisconsin during February over the month preceding is the striking feature of the mortality report given out by the State board of health.

A midnight meeting for shop men was the unique feature introduced by the health officials at Milwaukee recently. It is believed men employed at night have been much neglected in the campaign of instruction which has been going on for some time in the factories of Milwaukee.

An osteopath can not hold the office of city physician in Minnesota according to a ruling made by the secretary of the State board of health. The secretary bases his ruling on the fact that an osteopath is ineligible because a general knowledge of medicine is required.

Two suits were started against Milwaukee on March 25, for deaths from typhoid fever due, it is alleged, to polluted drinking water. In both suits the allegation is made that the city incurred liability because of its negligence in allowing the water to become polluted by sewage.

The public schools of Galesburg, Ill., have resumed regular sessions. The resumption of all services at

the churches has also been announced. An unusual epidemic of infectious diseases was the cause.

Detroit Federation of Labor has instructed its secretary, Charles H. Lewis, to inform the board of estimates, that the Federation believes the new tuberculosis hospital indispensable for the welfare of the city and asking that the appropriation be given favorable action.

The first national meeting of the American Association of Industrial Surgeons will be held in Detroit, in June, at the time of the meeting of the American Medical Association. Dr. J. E. Mead, head surgeon of the Ford Motor Co., chairman of the local committee on arrangements, says that 300 surgeons will be present. The meeting is to bring attention to the work of surgeons employed for industrial workers.

OHIO STATE MEDICAL BOARD.

The regular quarterly meeting of the Ohio State Medical Board was held in Columbus, April 3-4, 1916. All the members were present, including the newly appointed member, Dr. C. E. Sawyer, of Marion, recently appointed in place of Dr. T. E. McCann, of Dayton.

The Board approved the issuing of certificates of 388 persons under the limited practitioners' clause of the Platt-Ellis law; 139 chiropractics; 33 limited practitioners and 4 chiropodists failed on the recent examination, and 14 more were rejected as having failed to prove five years' practice. Three thousand five hundred and ninety-four nurses were issued certificates, and 250 applications are still under consideration.

Questions were submitted for the examinations for physicians, which will be held in Columbus, June 6, 7, 8 and 9. On the 6th and 9th, practical tests will be held at the St. Francis Hospital, and on the other two days written tests in the Armory Building on the Ohio State University grounds.

The following certificates were issued on reciprocity: Gertrude W. H. Transeau, Illinois, '07, graduate Tufts Medical College, 1904; Paul C. Lybyer, Illinois, '11, graduate Rush, 1914; Arthur H. Hixson, Illinois '15, graduate Rush, 1914; Claude D. Hamilton, Maryland '13, graduate physician and surgeon, Baltimore, 1913; Rollin V. N. Hadley, Michigan '14, graduate University of Michigan Homeo., 1914; Joseph C. Gallagher, Missouri '13, graduate Washington University, 1901; Nunzio Portoghese, Missouri '13, graduate Royal University of Palermo, Italy, 1906; Frank B. Bigarel, N. Y. '10, graduate Albany Medical College, 1900; Roger S. Morris, N. Y. '13, graduate University of Michigan, 1902; Theodore Burstein, N. Y. '15, graduate Bellevue, 1915; William R. Butt, Pennsylvania, '04, graduate University of Pennsylvania, 1904; Edward A. Bailey, Texas '13, graduate Meharry Medical College, 1912; Samuel W. Hogsett, West Virginia '02, graduate Unversity of Louisville, 1902; Edmund H. Niesen, Wisconsin '15, graduate Marquette, 1915; Normand C. Browand, Indiana '97; Bernard B. Neubauer, Maryland, '12, graduate Baltimore Medical College, 1911.

The Marquette University of Wisconsin was placed on the accepted list. The applications of the Bennett Medical College and the Chicago College of Medicine and Surgery for recognition were again rejected.

The Committee on Medical Colleges, in connection with the secretary, were instructed to reinspect the five Ohio medical colleges before the closing of the present term.

Application for the reinstatement of Dr. L. F. Preston, of Cincinnati, was again rejected. The certificate of Dr. John F. Jones, of Columbus, recently convicted under the Harrison Anti-Narcotic Law, was restored.

The Calendar

Cincinnati Academy of Medicine, April 17.

Development of the Tuberculosis Crusade and Its Needs, Dr. David R. Lyman, superintendent Gaylord Farm Sanatorium, Wallingford, Conn.

The Necessity for Adequate Hospital Care for Consumption and of What That Consists, Dr. H. J. Hawk, superintendent Metropolitan Life Insurance Company Sanatorium, Mt. McGregor, Saratoga, N. Y.

McDowell Medical Society, April 20.

"A Cure," Dr. Franz Miketta.

West End Medical Society, April 25.

Importance and Prophylaxis of Disorders of Speech and Voice in School, Dr. D. H. Abbott.

Ohio State Medical Association, Cleveland, May 17, 18 and 19.

Ohio Hospital Association, Cincinnati, May 24 to 26.

American Urological Association, St. Louis, April 17 to 19.

North Carolina State Medical Society, Durham, April 18.

South Carolina Medical Association, Charleston, April 18 to 20.

Union District Medical Association, Liberty, Indiana, April 27.

University of Cincinnati Medical Department

(Ohio-Miami Medical College)

FACULTY.—The faculty consists of twenty-seven professors, eight associate professors, twenty-six assistant professors and sixty-two clinical instructors. The fundamental laboratory courses—Anatomy, Physiology, Biochemistry, Pathology and Bacteriology—are taught by ten full-time men. There is also a full-time Professor of Medicine.

REQUIREMENTS FOR ADMISSION.

First.—Certificate of graduation from a first grade high school.

Second.—He must have completed a two years' pre-medical college course, covering the subjects of Chemistry, Physics, Zoology, and a foreign language.

Third.—A Medical Student's Entrance Certificate issued by the Ohio State Medical Board.

A six year combined Collegiate and Medical Course leads to the Degrees of B.S. and M.D.

Small classes assure individual opportunities.

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SPECIAL FEATURES.

The Out-Door Dispensary treats upwards of 25,000 cases annually.

Nearly one half of the time of the Junior and Senior Students is spent in hospital wards and in the Dispensary.

By special arrangement post-graduate work may be obtained in any department during the entire year.

A summer pre-medical course in Analytical Chemistry, Organic Chemistry, Physics, Zoology and Scientific German is available.

Tuition fee, $150 per annum. Special Courses Extra.

THE CINCINNATI GENERAL HOSPITAL (850 beds), the most complete and modern hospital in this country, and the Cincinnati Tuberculosis Sanitarium (350 beds), constitute the clinical school of the Medical College. The Good Samaritan Hospital, the German Deaconess Hospital, and Longview Hospital for the Insane, are also used for clinical instruction, aggregating over two thousand beds available for teaching purposes.

INTERNESHIPS.—Because of these facilities, the College can provide a one-year interneship for every graduate.

TEN SCHOLARSHIPS of the value of $150.00 a year, each, for four years, and TEN POSITIONS AS ORDERLIES in the new hospital, with maintenance and $10.00 per month, are available for students.

For detailed information and catalogue, address the DEAN OF THE MEDICAL DEPARTMENT, UNIVERSITY OF CINCINNATI, Cincinnati, Ohio.

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The Lancet-Clinic

SATURDAY, APRIL 22, 1916.

Contents

Contributed Articles

THE PHYSICIAN AND STABLE HYGIENE.

PAUL W. GOLDSBURY, M.D.,

WARWICK, MASSACHUSETTS.

AT A recent meeting of doctors in a rural district, a paper was read reviewing the causes of tuberculosis and the history of the lines of treatment employed. The discussion following turned to the subject of milk and the part it played in the matter. One physician ventured to suggest that a doctor had quite an opportunity for interesting the farmers in his vicinity in improved cow stable standards. Here was a delicate question. Can men in one profession attempt the instruction of men in another on a subject which is apparently outside their province? The physician to-day can not help seeing the necessity of meeting the demands for a higher standard of milk, and his clients, who are milk producers, must certainly face the problem. If the former can help the latter to a belief that sanitary advances are a good business investment, he is sure to retain their confidence, and this should have a practical compensation. The local physician as a leader in whatever makes for hygienic improvement in his neighborhood, is entitled to a living commensurate with the devotion to such labors.

§ 1

The State of Massachusetts has been wrestling each winter with the Ellis and other milk bills in an attempt to raise the standard of milk produced or sold within the State. Energies in behalf of such bills seem to be congested too much around the State House at the Hub. This is in part due to the fact that the State Board of Health has headquarters there and also because of the fact that the initation and executive officering of societies for social welfare in Boston tend to focus their efforts there.

If the merits of the discussions crowded into legislative halls and committee hearing rooms could be more widely disseminated, centrifugalized thoroughly throughout the length and breadth of the State, they might find a more impressionable soil. Legislative bodies and politicians become hardened and more or less immune to the demands and attacks made upon them, as they have to take up and deal with so many and various measures. The faces and appeals of lobbyists and society agents appearing in behalf of the different bills take on sooner or later a too familiar mould and cast. The warfare between health boards and uplift organizations on the one side and agricultural societies and money interests on the other, has been too acute and too much centralized.

Legislation in the State has been accused of having driven cows out; at least statistics show a diminishng number of milch cows kept in Massachusetts. The population has increased, the demand for milk as a food should have increased. In Boston the total and *per capita* consumption of milk has actually diminished. This may be laid to the stir and scare over the question of pure milk and the increased cost. More milk is shipped into the State than is produced within its borders. Legislation has affected the sanitary conditions of the stables within the State, but the puzzle now is how to carry through regulations for the inspection, or to govern the milk that is brought in from other States. Neighboring States do not all have the high standards deemed necessary for the production of milk under sanitary conditions which Massachusetts has and have not felt so strongly the legislative hampering. Farmers across the State line have seen the advantages, and even those who have had to ship milk as far away as Canada have been able to compete in spite of the supposedly great increase in cost of transportation.

§ 2

The clean milk bill of last winter was undoubtedly an advance over previous ones in its attempt to adopt legislation looking to an inspection of milk providing that quality should be a test irrespective of the locality of production. Under such a provision, milk from northern Vermont and New Hampshire would have to grade up to that raised within fifty miles of Boston. Former attempts at legislation have made rather too much of regulations as to stables and have excited a great deal of prejudice on the part of the farmer thereby. The cost of making over and modifying stables and all the requirements in handling the milk make him so much trouble that profits have been greatly reduced. The farmers are under no system of co-operation, and they have not been able to raise the price they obtained for milk to even keep pace with the general cost of living. Now, when the milk producer delivers his milk to the cars at four cents a quart, he is receiving practically the same as he obtained ten years ago.

The contractor assumes responsibility for transportation, refrigeration, bottling and delivery of this commodity from the time it leaves the farmers' teams until it reaches the consumer. He has quite a liability, but now gets nine cents where, ten years ago, he got nearer seven cents. The general advance in cost of everything within that time has had much to do with the increase to the consumer, but the extra care and trouble due to legislation and the demands for cleaner milk have had a considerable part as well.

The situation has been a complicated one and has resulted in attracting men and even women to take up milk production as a business enterprise. These persons wanted to furnish a high standard of milk and to show that profits could be made in their venture. Now, with plenty of capital to back them, or with possession of fair business capacity and native talent, there was an excellent chance to make good.

To advertise and market their product gave them an opportunity to reflect upon the ordinary stables and the methods and care in handling milk. Their product was practically exploited to the disadvantage of the average farmer, and they appeared to be very active in advancing legislation that was hampering him. He could not help becoming prejudiced when he saw them working for so many regulations. The farmer's professional field is so broad that working alone, he can not keep up with everything, and he may miss much of the significance of so specialized a thing as the laboratory test and the bacterial count. The local physician might here serve him in the practical comprehension of this subject.

§ 3.

All this agitation in the interest of pure and clean milk was awakening the general public to the sense of danger and fear, and this affected

the sale of milk. Many who could not afford the price of guaranteed milk would prefer to do without this article of food than to run any risk in using it. Legislation and agitation have resulted in diminshing the *per capita* consumption of milk, but have helped the sale of milk from fancy dairies. The public, however, wants safe milk, furnished at a minimum cost, and it is up to the State to work for such a guarantee of milk as will be considerate of the interests of the largest number of producers.

The real farmer has some advantage over those who have gone into the milk business, either from humanitarian motives, or because they were keen to sense the pecuniary advantage of the present situation. The model dairy, the temporarily popular dairy, though so well ordered, is rather tiresomely suggestive of cleanliness. The exacting housewife does not please her husband and whitened walls are irritating. The large stables, with their mechanical ventilation, are monotonous. The cow is a susceptible creature and often falls a victim to tuberculosis, even in the modern sanitary stables, run by an enthusiast and bred in hot-house science. His training has not developed the patience to "sense" the old cow.

In France, it is said, the cow is regarded as one of the family, and it is a well known fact that people have lived in stables when they could not find lodgings elsewhere. The seasoned farmer usually serves his cow with humaneness, even where his stable falls below the legal requirements, and wants his stable snug and comfortable and perhaps attractive, for if he has any artistic sense he is pretty sure to share it with his cow. She does not stand well "business pressure," but does appreciate little amenities and kindness, which no mere hireling can give, Most farmers have been dealing with cows all their life and have a natural affection and understanding of them. This humaneness and companionableness must have an effect on the quality of the milk, even though at present the microscope can not detect such effects. Experience to understand and appreciate the cows' viewpoint should be a factor as well as cleanliness in keeping down the bacterial count.

The best bred stock is especially susceptible, even under scientifically correct standards; the cattle miss something in the way of treatment and they break down under the pace set. A man with both a head and a heart, and who really lives in the country will be moderated by nature's generous expanse there. He will not force the cow, but will know the gait she likes best to take. The whole matter should work out in favor of small farms where the owner either milks his own cows, or has a very close and personal relationship to them.

The good farms occupied today in New England have certain advantages in topography and drainage that would not be reckoned in by the ordinary laboratory measures. Such farms, nestling on the hills here and there, are much more picturesque, going through a slow evolution, than the large plastered plant of the invader into farming. The question is how to utilize the naturally selected, slow growth farms, and how to regenerate and inspire the man living on them to get results that are both wholesome and sanitary. The laboratory has imposed its standards without a comprehensive understanding of either the topography of the land or mentality of the individual. The fancy farmers can not supply milk enough for the multitude; at present they but corner the market. Their interests fit better at the hub than at the periphery. Legislation can not be imposed entirely from the center and radiate wholesomely outward. The standards should be in the interest of the consumer and they must not work out so as to prevent his getting his milk. The public wants the best that the average farmer can give, for upon him must the public depend for what it consumes. Its purse is limited. The normal acquaintanceship between these two should be encouragd in a matter which has so much to do with health.

§ 5.

The country doctor has both a responsibility and an opportunity in the direction of his endeavors toward public health. He can help to develop local sanitary standards as they affect the health of his neighborhood and community, and he can also encourage the standards which promote quality and true value of whatever is sent out as a product for consumption. He can readily appreciate the value of whatever works ultimately to the good reputation of his district. It is futile to make improvements sporadically when the need is so urgent. Farmers will have to get together, and physicians as well. Medical

societies can take up this matter and work with the granges or local county farm bureaus and leagues. Such societies may be looked upon as the spokes which secure the tire to the hub. If the rim is travelling, the hub is sure to arrive where it is so anxious to go, provided judgment is used in steering.

§ 6.

There has been too great a chasm between the consumer and the producer, and their relations have become strained. The health officers going out from a too centralized office appear at a farm in such a way that they excite the suspicions much as policemen and detectives do. Against such a prejudice their work loses much of its force. It is to the interest of the consumer that one barn as well as another be brought up to sanitary requirements. Is this accomplished? Not always. Politics and favoritism work against this. A delegated officer may fear to inspect the barns of some influential man and improvements needed are not made, whereas a neighbor of his may be pushed to make all the improvements to follow the letter of the law. Infected milk from the former mixed with the clean milk from the latter will poison the whole, and the innocent will be blamed unjustly. This works out so that many an innocent man is disgusted and driven out of the business. Now, the public can not afford to let the milk business be monopolized, either by the model dairy interests or influential milk producers in the different districts; the public then is interested in the kindly, persuasive education that makes the farmer furnish safe milk at a reasonable cost.

Co-operation seems to work better in the West than in the East. Apple growers' associations in the Northeast are usually successful in obtaining top prices for their fruit. They establish standards of grading their apples, which members must meet and then they do their own marketing. Why should not farmers be co-operating through their societies, helping to set standards as to pure milk and then taking up the matter of marketing their product? The milk producer is receiving but four cents, where the milk contractor receives nine cents. Ordinary business instinct shows that the controlling interest in a corporation must be over 50 per cent. Can more of the work necessary for clean milk be done upon the farm? There is the transportation and delivery, which is beyond the reach of the farmer, but it may be possible or him to bottle and grade his milk. Country physicians should be interested in seeing that their neighbors and patients are not getting the small end of the handle. Automobiles and better roads are affecting railroad monopoly in the domain of transportation. Skilled specialists and laboratory workers in the cities exact heavy tribute of the rural practitioner. Is there no redress? Can not the latter interest himself in lines of sanitation affecting a product for which there is a growing demand? If he can improve stable standards and find a way to establish a higher grade of milk at the place where produced, he should be serving local business interests and the interests of public health at large.

In the country there is every natural advantage, as far as mere physical environment is concerned, for sealing up for shipment the purest quality of milk. The physician should be encouraged to cover that field of endeavor, the cultivation of high hygienic standards, so that so far as the stables and the handling of milk is concerned, a guaranteed product can be put up on every farm. Some inventive genius may be needed to facilitate bottling and refrigeration from there, but with so much of the milk business under his control, the farmer can assure himself that he is in a dominating position as far as his share of the returns is concerned. The government seems to be giving a square deal in the parcels post form of transportation. Now, instead of jealousy and stubbornness, so native to community isolation, team work is needed to hold the pace and keep the trail educationally and hygienically in condition, so that the farmer can control his share of legislation.

The pay of an assistant surgeon in the Medical Reserve Corps is $2,000 per year on shore duty, and $2,200 at sea. At the expiration of three years' service, if successful in passing examination for the rank of past assistant surgeon, pay on shore is $2,400; at sea, $2,640. Quarters or their equivalent are provided.

TIN FRACTURE SPLINTS.[1]

C. C. JOHNSON, M.D.,

CREIGHTON, NEBRASKA.

FRACTURES, dislocations and obstetrical work form the chief surgical work of the country doctor, and I may add that they erect more monuments to the unskilled labor of the physician than any other branches of the practice of our profession. Therefore, I choose fracture splints as a topic for discussion.

I shall make a few observations and possibly a few statements which may meet with your opposition, but they are from my personal experience and may be taken for what they are worth.

I had hardly located and unpacked in the town in which I work when an individual possessed of unusual linguistic accomplishments visited me and separated me from sixty dollars. In a few days there arrived in my office a suitcase of wire splints. These were wonderfully and fearfully made, but in justice to the manufacturers I must admit that they had been considerate enough to label each article, that I might know what they were for and when to use them. A slight consolation I still get from this purchase is that many of my colleagues of more years of experience than I, really use them, while others retain them as souvenirs of misspent money and gullibility.

My first fracture cases were successful in spite of my ignorance. However, they served to start me thinking. I had had an excellent course in fractures in school, but there were so many things to remember then, and so little space in which to store them, that I did not comprehend what was going to be expected ultimately of a physician. The attendance of a patient in a littered home and in a hospital clinic are two entirely different propositions. My wire splints were always at the office—no doubt fortunate for the patient. Boards served me originally as splints. Like many others I have been guilty of using the closed plaster spica for the final dressing after edema has disappeared, but I have never been guilty of putting a closed plaster dressing upon a freshly fractured bone. It is my opinion that the spica plaster splint has done the profession more harm than it has ever done it good. It requires skill to apply a plaster splint properly and the best of judgment to know when to use it. For the past several years I have discarded all forms of closed splints.

It is not my purpose to give a lecture upon fractures and dislocations, but I must repeat that the reduction and holding of fractures constitute purely mechanical problems. One must understand the mechanics of the part to reduce a fracture easily and properly and then keep it reduced. There are three elements in mechanics, namely, power, weight and fulcrum. If one becomes familiar with these principles as applied to human anatomy, nearly every fracture is easily held in position. And unless a fracture is easily reduced, I have found it generally true that it proves difficult to hold it in position and to secure a good result. Forcible reduction is unnecessary and, I believe, injurious. I have seen a few cases in which the attending physician pulled until he nearly succumbed, to reduce a COLLES' fracture, and still it did not reduce. A COLLES' fracture is easily set if properly done. I have seen a fractured part bandaged until the extremity became cyanotic in an endeavor to hold the bones in place. This is certainly purposeless. In my experience I have never had any difficulty in holding the fractured parts in apposition when once I had succeeded in reducing the part properly and the proper mechanics had been taken care of in the dressing.

Men in the city, in touch with ideal operating rooms and equipment, may be inclined to the open method of treating fractures. Even under such ideal circumstances, they are not justified in opening a simple fracture before the eighth or tenth day; and in compound fractures, not until every possibility of an infection has passed. We, in country practice, know that the open method is not practical and that it is attended with greater dangers of infecton than is abdominal surgery. I am glad to see that the open wave is receding but do not wish to be understood as condemning it entirely, for there are cases in which it constitutes the only proper line of treatment.

It is, I believe, a surgical axiom that bones will tolerate less infection with the same measure of success than any other parts of the surgical body, and what applies to the bones themselves is doubly true of the joints.

[1] Read before the Northwestern Nebraska Medical Society, Long Pine, Nebraska, July 15, 1915.

FIG. 1.—TIN FRACTURE SPLINTS.

FIG. 2.—TIN FRACTURE SPLINTS.

Necessity then becomes the mother of invention. And it was from being handicapped that started me, several years ago, looking for splint material that would be practical, always at hand, readily sterilizable, light in weight, yet strong enough to give support, and, besides all this, capable of being worked into shape to fit the part desired. For these purposes I have used the simplest splint material possible, namely, tin. I carry a pair of tin snips in my grip and make a splint to fit the part, out of any old piece of tin that may be lying around. I have made, or have had made for me, splints for nearly every part of the body. In their construction I have made use of others' ideas. For instance, I have made a modified WALKER splint for a COLLES' fracture and have devised two splints of my own for this purpose, which I believe mark an improvement over older forms. They are shown under Nos. 1 and 2, of Figures 1 and 2. I have designed also a hip splint following the lines of an original of plaster and have treated two cases with this kind of splint. It is shown under No. 3. You would be surprised to see how nicely this works. I found in making these that the necessary angle is one of forty-five degrees. By taking a measure around the hips at the crest of the ilium and cutting the apex of the angle at the fold in the groin, and then another measure of the circumference of the thigh for the width of the tin, a proper splint can easily be made from measurements alone. This splint conforms to the proper angle in small children and at the same time abducts and extends the limb. The splint is easily kept clean, a point worth a great deal.

I designed a clavicle splint which is shown under No. 4, upon the well known principle of upward and posterior traction. It is an old and well known fact that when the body is supine, the clavicle, though broken, falls into place and maintains a correct position. The ideal treatment for a fracture of the clavicle is, therefore, found in absolute rest upon the back. To secure a good result in the ambulatory patient I use splint No. 4, which I find works very satisfactorily.

I had a fracture of the neck of the femur to deal with three years ago, which started me to work devising a splint for it. WHITMAN'S[1] plaster dressing provides for support beneath the joint. Besides this we know that we must have abduction and extension, and twenty-two to twenty-four weeks in bed. I designed and supervised the making of the splint shown under No. 5. It is made of very heavy galvanized sheet iron, the brace curves being made of iron bands measuring one inch by one-fourth inch, bolted together with stove bolts. You will note that any angle of abduction is possible, that support is provided posteriorly, and that the splint is easily adjusted and cleaned, providing also for use of the bed-pan and urinal. Horizontal supports may be placed under it if desired. No. 6 is its companion and is used to splint the outside of the thigh. I have a friend who is using this abduction splint of mine with an outside dressing of moulded plaster. DR. SMART, of Madison, Nebraska, has suggested using for outside support a moulded heavy copper wire which I believe would do very well.

No. 7 was designed to meet the needs of a birth fracture of unknown cause occurring in the middle third of the humerus of a little baby. Note that I made provision for traction by the catch over the shoulder and against the forearm bones; note also that the splint conforms to the natural position of the arm of the infant, is easily fastened to the undershirt and is not in the way. The end results with this splint in this case proved perfect.

No. 8 is a wedge-shaped splint designed for fractures of the humerus. No. 9 is an adjustable elbow splint which when reversed becomes a knee splint. No. 10 is a knee-cap splint that I have used successfully, and is so simple that one wonders why it was not used before.

You will find a large range of usefulness for these splints, and new possibilities for their employment every day. Well-shaped pieces of tin may also be used to add to supporting power of adhesive plaster, to stiffen up dressings, for fractured ribs and over the spine, and around the ankle. Finger or thumb splints are also easily made of tin, and tin splints may be used about injured limbs when you desire some sort of support for crushed hands, arms or legs. I want to show you a gutter splint (No. 11), which, I believe, is simpler and more practical than any I have ever seen. It can be made from

a piece of stove pipe or wash boiler. It fits the part, allows ready inspection of the part, and a window may be made in it if necessary without weakening the splint. I have made these splint many times and can say truthfully that they are worth their weight in gold.

I perforate all of these splints with a small punch, making many holes, so as to allow for ventilation.

I believe it highly probable that too rigid fixation tends to prevent union, owing to imperfect osteogenesis. The gentle stimulation due to a slight action of the broken fragments coming in contact with each other is, I think, good. At any rate, in questioning men who have had much experience, it is interesting to hear them invariably claim to have obtained better results in the old days when boards were used than since the advent of plaster spicas and patented splints. This has been my experience, too.

I note that the orthopedic men are divided as to the value of the plaster fixation splint in tuberculosis of the hip. Equally good results are reported from use of the BRADFORD extension and abduction ambulatory splint, as with the plaster spica. NATHANIEL ALLISON[2] reports, in a series of twenty-five cases treated with the BRADFORD splint, an average of .56 inches of shortening and an average of 1.26 inches of strophy of the thigh, while in a series of twenty treated with the plaster spica there was 1.45 inches shortening and 1.47 inches atrophy of the thigh. This report certainly favors the BRADFORD ambulatory splint. Reference to these observations does not come within the direct scope of this paper, but I mention them to support my advocacy of a more extensive use of splint materials other than plaster. Ready-made splints never fit. I believe that in well selected cases plaster is of value and may be used for permanent dressings, but never, never should it be used as a first dressing in fractures or dislocations. Nor should it be used if you can find something to take its place, such as tin, which is always easily secured.

1. WHITMAN: Keen's Surgery, *2*, 236, Philadelphia,
2. NATHANIEL ALLISON: American Journal of Orthopedic Surgery, *12*, 623 (1915).

STREPTOCOCCOSIS, CLINICALLY CONSIDERED.*

OSCAR BERGHAUSEN, M.D.,
CINCINNATI.

IT IS possible, owing to researches, particularly during the past ten years, to classify under a single heading the various clinical manifestations of the large group of infectious organisms bearing the name of streptococcus, and the name "streptococcosis" seems very appropriate. We know that these organisms are constantly with us, chiefly inhabiting the oral and nasal passages, the skin and the genitalia and that certain predisposing causes are necessary for the production of an infectious state. Of late, it has become customary to look for infectious foci as the starting point of obscure conditions presumably infectious.

We know that there are many varieties of the streptococcus, and that there is a close relationship between the pneumococcus and the streptococcus. That they can be readily changed from the one into the other, will be doubted by many. We know that oxygen, food supply and acidity influence morphological characteristics, so that this change might be the result of artificial cultivation. We have been in the habit of preparing all bacterial vaccines on culture media containing human blood serum or ascitic fluid, so that the proteins which are elaborated may be built up from split products of a human protein.

We will define streptococcosis as a diseased condition caused by cocci growing in chains, and study the different clinical manifestations which may follow in the human being when an infection has occurred. For simplicity's sake, let us classify them as follows:

STREPTOCOCCOSIS.

1. *Focal.*—Wounds, teeth and gums, mucous membranes, glands, bones, sinuses, respiratory tract, lymph channels, veins, abscess formation, erysipelas.

2. *Metastatic.*—Secondary involvement of the central nervous system, peripheral nervous system, joint structures, bone, muscles, tendon

*Read before the Mississippi Valley Medical Association, Lexington, Kentucky, October 19-21, 1915.

sheaths, heart muscle, kidney, thyroid gland, stomach, appendix, liver.

3. *General.*—Septicemia, septico-pyemia, pyemia.

We have all seen localized infections caused by the streptococcus. The point of entrance is usually small, but the quick development of tenderness, pain, redness, swelling, fever, lymphangitis and often phlebitis, is common. Every surgeon, obstetrician and gynecologist has seen such infections. The tendency under proper medication is for self-limitation of the infectious process, resulting, at times, in abscess formation. Although the danger exists that the process may become generalized, very acute and severe symptoms may arise, while the process still remains localized.

CASE I.—Married woman, aged thirty-five years, mother of a healthy child, had pricked a finger while trimming a hat. The small wound was neglected; within twelve hours, lymphangitis had set in, which rapidly involved the forearm, later the upper arm. The patient consulted her physician, who treated it surgically for three weeks. She then asked for consultation. The arm was found much thickened and swollen. Numerous incised wounds made by the surgeon had healed over. The axillary glands were enlarged, the soft parts and muscles about the upper arm, shoulder joint and even the pectoralis region were much swollen and hard as a board. The woman despite daily attacks of fever (102° to 103° F.) and chills was up and about most of the day. She suffered excruciating pain. After careful treatment, principally symptomatic, rest in bed and the use of antistreptococcic serum, to which she quickly responded, an abscess developed under the arm; this was opened and a profuse discharge of pus followed. Culturally a diplococcus growing in chains was obtained. The use of the autogenous vaccine was now begun. The patient made an uninterrupted recovery, no metastatic process having developed. The blood culture was negative.

Again, the infection is a mixed one, the streptococcus being a secondary invader, at times producing slight, again severe, symptoms. Such mixed infections commonly invade the respiratory tract and, no doubt, produce many of the so-called "colds" or "grip-like" attacks. An autogenous vaccine prepared from the streptococcus pyogenes often isolated, assists greatly in the healing process. Patients suffering from pulmonary tuberculosis are subject to acute exacerbations, and not infrequently the streptococcus is the chief secondarily invading organism. In such instances the autogenous vaccine may again be of distinct value in controlling the exacerbations. Likewise, in subjects of hay fever, it has been our experience that the already sensitive mucous membranes are prone to infection by infectious organisms, and not infrequently a pure culture of the streptococcus can be obtained. In such patients a profuse purulent discharge is common, breathing becomes difficult, and asthmatic symptoms follow. In our experience, the use of the corrsponding bacterial vaccine and the pollen extract subcutaneously has been followd by distinct alleviation of the symptoms.

By focal lesion we commonly understand the existence of an infectious nidus somewhere in the system. One or more of the localized infectious processes above referred to is the primary source. In late years particular attention has been called to this class of infections by BILLINGS, ROSENOW and others. We will not enter into a discussion of their work except to mention a few illustrative examples.

Secondary involvement of the central nervous system is not uncommon after middle ear disease. We know that in such cases the blood in the lateral sinus not infrequently contains the streptococcus. All surgeons fear the development of a generalized streptococcal septicemia, and advise ligation of the external jugular vein as a preventive measure. The central nervous system can be involved by direct extension, in which case a lepto-meningitis develops, the streptococcus being found in the the cerebrospinal fluid. However, the meningeal coverings of the brain may be involved following remote and often minor infections. In all probability, the so-called "cerebral rheumatism" is due to the direct action of the organism by many considered a variety of the streptococcus. The lesion involving the meninges need not necessarily be a diffuse one, at times merely small patches of pachymeningitis or meningo-encaphelitis developing. The following case history represents the clinical picture which may follow a simple tonsillitis. Similar cases have been studied by OPPENHEIM (according to a verbal communication by Dr. DAVID WOLFSTEIN) during a streptococcal epidemic in Berlin; in a few cases,

autopsy disclosed localized areas of hemorrhagic meningo-encephalitis.

CASE II.—A college student, aged eighteen years, was first seen by DR. CARL HILLER, later by DR. DAVID WOLFSTEIN and myself. The patient had had an attack of acute tonsillitis several weeks previous to the onset of the following symptoms: convulsive seizures at intervals, tonic and clonic in variety; no biting of the tongue, and no involuntary movements. Attacks accompanied by violent efforts; the patient apparently not recognizing his surroundings. Such attacks would last a few hours and were followed by perfectly lucid intervals lasting several days. Then they would recur, lasting longer each time. During such an attack under ether anesthesia a spinal puncture was made. The fluid was not under pressure and an examination showed no cells, no increase in the globulin, a negative Wassermann reaction and an absence of the power to reduce Fehling's solution. The urine contained a heavy deposit of urates, but no albumin, no sugar; reaction, acid. The reflexes were increased, there was no KERNIG or BABINSKI sign, and sensation was intact. There existed a slight deviation of the tongue to the left and a drawing of the mouth to the left. DR. WOLFSTEIN diagnosed the condition as one arising from localized acute encephalitis, punctate in character. The patient would rouse after a hot pack. The attacks eventually did not recur, and today the patient is apparently perfectly normal.

We have very little evidence that the peripheral nervous system is directly invaded by the streptococcus. We often hear of a relationship between choreic attacks, acute articular rheumatism and infected tonsils. Multiple neuritis may follow acute tonsillar infections.

CASE III.—A physician had been the victim of an infection by the malarial plasmodium and the filaria-loa. These he acquired while practicing in the tropics. The latter infection still troubled him at times, although he had been in this country for the past ten years. Following an attack of acute tonsillitis, he became quite ill with chills and fever, intense pains throughout the body, with some swelling of the joints. Dr. FRANK LANGDON was asked by Dr. EMIL BLUNDEN to see the patient. The former diagnosed the condition as multiple neuritis with joint involvement, and asked for blood examinations. The fresh and stained specimens failed to reveal the presence of filaria-loa or the malaria plasmodium. The patient still had the nodules under the skin. The total white count was 11,000, the polynuclear count being 77.2 per cent. The Wassermann reaction was negative. The opinion was expressed that the patient was suffering from the effects of the preceding tonsillar infection. Anti-rheumatic treatment resulted in a complete recovery.

Acute articular rheumatism is usually preceded by an attack of acute tonsillitis. Very often the thyroid gland is also enlarged. At times the infection seems to involve the muscles more extensively than the joints; such attacks of "myositis" occur more often when the tonsils are of the imbedded type, and when the crypts are filled with pus. Improvement ordinarily follows when the tonsils have been enucleated, provided that the damage already done has not been too severe and the secondary changes not too marked. That the streptococcus after entering the blood current through a local lesion, can produce a distal infection in the heart muscle, upon the heart valves and in the kidney, has been amply demonstrated, both clinically and experimentally. We should not conclude, however, that all infections of these organs are due to bad teeth, bad tonsils, etc.

Possibly some obscure infections of the conjunctiva, iris and retina are due to the streptococcus as well as other organisms, the entrance point of the infection being concealed. In one instance of a generalized herpetiform eruption, we were able to isolate the streptococcus pyogenes from the lesion on the lower lip. Again, in a patient suffering from purpura hemorrhagica, we were able to isolate the streptococcus from the blood shortly before death. In this case the gums were badly infected and we are unable to state whether the streptococcus was the cause of the purpura or whether the condition was one of terminal streptococcemia.

Any one variety of the local or focal lesions previously discussed can result in a septicemia or pyemia when the streptococcus is able to multiply within the blood current. At times the clinical picture of streptococcosis develops very quickly after minor wounds or infections. Here the prognosis is grave but not necessarily fatal.

CASE IV.—A young medical student accidentally infected an ingrown toenail. He later became ill with chills, fever, erythema, arthritis, diarrhea, etc. The blood culture yielded a pure

growth of the streptococcus pyogenes. Specific serums were of no avail. The autogenous vaccine was used, as well as symptomatic treatment. Within four days his temperature became normal and remained so, the patient making a perfect recovery.

Although streptococcosis may follow the puerperium, traumata and operations, it is not infrequently the sequel to local infections. At times the portal of entry is concealed, as in an ulcerated hemorrhoid or suppurative adenoid. Again, it becomes impossible to discover the portal of entry, and we are forced to consider the possibility of "streptococcus-carriers." As a rule, a patient with high fever, chills, a septic appearance, cutaneous eruptions in the form of erythema, petechiae or purpura, arthritis, lymphangitis, parotitis, endocarditis and jaundice, should have a blood culture made to determine the presence or absence of the streptococcus. One or more of the above revealing symptoms may be absent, the infection running rather an obscure course.

Case V.—A boy, aged twenty-one years, became ill three months before I was asked to see him by Dr. C. C. Fihe. The first symptoms resembled those commonly found in patients suffering from influenza. Three months after the onset of the symptoms the patient complained of headache and stiff muscles; the fever was high and irregular. Examination showed the presence of tonsillitis, pharyngitis, acute endocarditis, arthritis, enteritis, but no nodules about the wrist. The blood culture showed the presence of the streptococcus pyogenes. The patient died six months after the onset.

Again, the course of the disease is a very chronic one, a typical example of which is the so-called "endocarditis lenta," in which the streptococcus viridans can be isolated from the blood. Such patients may live for two or three years, dying suddenly from acute heart failure, or hemorrhage into the brain or kidney. Even this condition is not hopeless; one patint, first observed in October, 1910, ran a typical course for many weeks; the typical organism was isolated from the blood upon two separate occasions; today he is perfectly well, except for a chronic leg ulcer, and his blood culture has been repeatedly negative.

Discussion.

DR. BUCKMASTER, Effingham, Illinois:

I recently saw an interesting case, and have been listening to see if Dr. Berghausen would not mention a similar one in relating his experiences. This case was that of a girl, four years of age, previously healthy, who had never required the services of a physician until about two weeks before I first saw her. The first thing noticed was that she began to grow pale, although her parents did not think she seemed weaker than usual. This paleness increased as the days passed. About two weeks later the child developed a fever. Her physician said it was malaria. The child had been taken to him on Tuesday, and on Thursday the same physician saw her again, but at no time did he record her temperature. On the following Monday, the parents took her to a second physician, who found her with a temperature of 102° F. On the following Thursday I was called to see her. Her temperature was 104° F.; she was very pale. When the child entered the hospital white count was 6,500, with 90 per cent. polymorphonuclears. Blood examination made at that time showed a number of streptococci. The next morning the blood count showed whites 5,000, practically the same differential, with hemoglobin, 30 per cent. The next morning it was 25 per cent., the child dying a few hours later. The liver was moderately enlarged, as was also the spleen, and the urine was laden with streptococci. There was evidently a chronic tonsillar infection. There had been no acute tonsillitis.

We must not be misled by such statements, for patients frequently do not give a tonsil history when the tonsils are actually infected. Another fact connected with these chronic infections is that it is a common thing to find bacteria floating in the blood in patients having no fever. I believe that infected tonsils are often the source of infection in the appendix. It is significant in this connection that gall-bladder troubles are usually preceded by an infection in the appendix. If you study these cases carefully, you will frequently find kidney infections and infections of the heart. We also find many cases of hyperthyroidism associated with infection of the gall-bladder. As the patient advances in age, reaching forty or fifty, we begin to find high blood pressure conditions. I am quite convinced that there is a common relationship among all these conditions, and that they originate with tonsillar infection. Stomach ulcer belongs in the same list. The work of Rosenow in a very interesting and practical manner describes the origin of all these conditions.

DR. WILLARD J. STONE, Toledo, Ohio:

I should like to ask Dr. BERGHAUSEN briefly to outline his method of taking the blood culture.

DR. OSCAR BERGHAUSEN, Cincinnati (closing):

In answer to the discussion of Dr. BUCKMASTER, I wish to state that it was my privilege to see a case similar to his in which the diagnosis of acute lymphatic leukemia was made. This patient had had an attack of acute tonsillitis, and later a necrosis of the jaw bone developed, the patient dying within two weeks time. The blood culture was negative, although I had expected to find the streptococcus. In my experience, a 90 per cent. polynuclear count always means a grave prognosis.

The blood cultures were made by introducing about 2 c.c. of fresh blood into ordinary milk bottles, containing about 180 c.c. of sterile bouillon, and the remainder of the blood into about 10 to 20 c.c. sterile 2 per cent. sodium citrate solution. The latter was diluted with fresh sterile distilled water, centrifuged, rewashed, and then the sediment used to make shake cultures and transplants on various culture media.

I feel sure that in many of these patients with acute anemias who have had bad tonsils, we shall be able to isolate the streptococcus, providing we use this more elaborate method of blood culture.

MILITARY MEDICINE OR MEDICAL PREPAREDNESS.

WILLIAM S. KELLER, M.D.,

CINCINNATI.

AS a prelude to what I have to say, I wish to make it clear that I am distinctly "Pro-American." My interest in military medicine is that which pertains solely to the betterment of our United States in times of peace and of our medical efficiency in times of war. I am not trying to organize an army to fight anybody, nor do I wish to be regarded as against the present administration of the medical military policy of those in charge of the United States Army and Navy.

§ 1.

One of the dark chapters in the history of medicine in this country is the care the soldiers received during the Civil War and also the Spanish-American War. We are told also that the medical profession of the present army in Europe was unprepared and is greatly inadequate. The medical profession must be prepared to meet the demand for efficient medical officers or face the disgraceful fact that its imperfect knowledge of camp sanitation, camp selections, its ignorance of the Lyster sterilizer, the Darnell filter, drainage, tropical diseases, etc., is frequently responsible for a greater loss of life among soldiers than are the bullets of the enemy. This, you will recall, was the story in the Spanish-American War, where the chief losses were in regiments in camp which never left this country.

It is not improbable that in case of war we should need to put in the field an army of one million men. For such an army there should be ready from twelve to fifteen thousand well trained medical officers. This would mean approximately one in every ten of the registered physicians in the United States. We have at present in the regular army, including contracting surgeons, only about 550 medical officers. With the medical officers of the militia and the relatively small number of those in the Medical Reserve Corps, the total number of physicans prepared for service would not be over from twelve to fifteen hundred, approximately one-tenth the number needed for any serious war. It is a mistake to think that efficient medical officers any more than efficient soldiers can be had without training. The efficiency of the army depends upon preserving its health. The physicians of civil life are totally unprepared for this work, and when we think that nine-tenths of the medical officers in case of war must come from this class of men, it appears to me that it is the duty of every patriotic physician to prepare himself for possible service, if he can do so.

Harvard Medical School in the Graduate School of Medicine, is planning instruction in military medicine. The final arrangements are at present in the hands of a committee consisting of President LOWELL, Dean BRADFORD of the Medical School, and Dean ARNOLD of the Graduate School of Medicine. Major WESTON PERCIVAL CHAMBERLAIN, A.B., M.D., who was selected for this work by Surgeon General GORGAS, has been appointed lecturer on military medicine. This course will begin July 1, and extend over the period of a month or six weeks. The authorities are planning to have field and practice work in

connection with the Boston Militia and the course may ultimately be co-ordinated with the School for Medical Officers, organized by the army

In a recent letter from Major CHAMBERLAIN who is in charge of the Post Hospital, Plattsburg Barracks, N. Y., he informs me that several of the lectures will be given by Boston men who have served in the American Ambulance in Paris, and can give their personal experiences with the treatment of the wounded. There will also be a naval medical officer to lecture on military medicine peculiar to the naval service. It appears to me that a course under the immediate direction of men who have seen such recent service, will be a distinct advantage.

§ 2.

In a recent number of the *Journal of the American Medical Association,* I recall the report of an article taken from the *British Medical Journal* on "Trench Fever." McNEE, RENSHAW and BRUNT claim this fever to be a distinct and definite entity of infectious nature readily transmissible from one person to another through soiling with blood. I mention this condition as one of the many emergencies which the present medical profession in Europe is dealing with as a result of modern warfare.

§ 3.

Major CHAMBERLAIN has outlined roughly what a course in military medicine should cover.

1. The history of military medicine and its contributions to science; notable work of certain military surgeons.

2. Duties devolving upon military medical departments in times of peace and war; sanitary inspections.

3. Records and supplies of such a medical department; methods of obtaining and accounting for same; samples of medical equipment to be shown.

4. Examination of recruits for the army; fundamental importance of the subject; bearing on pension claims.

5. Military sanitation in general; housing, feeding, clothing and equipping of the soldier.

6. Personal hygiene; hygiene of hot and cold countries; sanitation of troop ships and troop trains.

7. Principles of marching; hygiene of marching commands; camp sanitation.

8. Diseases prevailing among soldiers and their prophylaxis; their bearing on the outcome of campaigns.

9. Medico-military statistics; effects of age, length of service, arm of service, station and race upon them; acclimatization in the tropics.

10. Military weapons and the character of the wounds they produce; gas poisoning.

11. Treatment of wounds in war; differences between civil and military practice and reasons therefor.

12. Organization of the army, line staff; sanitary units in the field; ambulance companies, field hospitals, hospital trains, hospital ships, etc.

13. Lines of medical aid on the battle field; hospital corps drill; evacuation of the wounded; importance of prompt evacuation.

14. Tactical knowledge needed by medical officers; map problems.

15. Geneva and Hague Conventions; Red Cross Society; other forms of civil assistance; distinctive markings of ambulances, hospitals, hospital ships and sanitary personnel.

16. Medico-military preparedness.

I am not aware of any book which covers more than a fragment of the schedule which Major CHAMBERLAIN has outlined. Indeed, I am told that the course in the Army Medical School in Washington is hardly as broad, but covers certain subjects in more detail than will be possible for the Boston authorities to devote to them in a summer course.

§ 4.

My idea in submitting this report to you is threefold:

1. To impress upon the profession the tremendous urgency and need of medical preparedness.

2. To interest as many of the men as possible in such a course as I have detailed. If possible, to have them try and arrange their summer vacations in such a way that they may take advantage of some such course on modern medico-military preparedness.

3. To suggest that during the next school year we may have some form of instruction in the medical department of the University of Cincinnati or the Cincinnati General Hospital pertaining to military medicine.

It appears to me that with Ft. Thomas just across the river with its resident medical men, some of whom have seen active service, and with the present military staff of the State militia, it would be quite possible for us to have a well-organized and efficient course of instruction.

Discussion.

Following the reading of this paper by DR. KELLER upon the floor of *The Academy of Medicine of Cincinnati,* the following motion was made, seconded and carried: *That the American Medical Association be requested to have a special representative, preferably a physician, take down the lectures to be given in the course in military medicine, outlined by Harvard University, and that his notes be published in the official Journal of the Association in as full form as space will permit.*

Quotation

THE MEDICAL MAN'S EDUCATION.

[*From Charles W. Eliot: "Changes Needed in American Secondary Education." Publications of the General Education Board. Occasional Papers, No. 2, New York, 1916.*]

There is one profession, however, in which the educational processes have been adequately changed, but only within recent years, namely, the profession of medicine. The reason for the comparatively early improvement of medical education is that the medical art has always depended for such measure of success as it attained on the physician's power of accurate observation, and his faculty of reasoning cautiously and soundly on the testimony which his senses gave him. From remotest times the successful physician has been by nature a naturalist.

He saw and heard straight, and his touch gave him trustworthy information. He has still, and must always have, the naturalist's temperament, and he must possess the naturalist's trained senses. The reason that medicine and surgery have within twenty-five years made such astonishing progress is that the practitioner, possessing the senses and mental habits of the naturalist, has been supplied through the progress of biological, chemical and physical science, with wonderful, new means of accurate diagnosis. The training the medical student now receives is largely individual training in the use of his senses; and this training is given by experts in the use of their own eyes, ears and hands in diagnosis and treatment. The just reasoning follows on the trustworthy observation.

* * * * * *

The men who, since the nineteenth century began, have done most for the human race through the right use of their reasons, imaginations, and wills are the men of science, the artists, and the skilled craftsmen, not the metaphysicians, the orators, the historians, or the rulers. In modern times the most beneficent of the rulers have been men who shared, in some degree, the new scientific spirit; and the same is true of the metaphysicians. As to the real poets, teachers of religion, and other men of genius, their best work has the scientific quality of precision and truthfulness; and their rhetorical or oratorical work is only their second best.

The most exact, complete, satisfying and influential description of true neighborliness in all literature is the parable of the Good Samaritan:

> Which of these three, thinkest thou, proved neighbor unto him that fell among the robbers? And he said, He that showed mercy on him. And Jesus said unto him, Go, and do thou likewise.

It is an important lesson to be drawn from the Great War that under the passionate excitements and tremendous strains of the widespread disaster the medical profession and the nurses of all countries are holding firmly to that exact definition of the neighbor, and are obeying strictly the command, "Do thou likewise." These are men and women who have received thorough training of the senses without suffering any loss of quick sympathy or of humane devotion.

C. E. A. WINSLOW, of Yale Medical School, is the editor of the recently established *Journal of Bacteriology,* the official organ of the Society of American Bacteriologists. It aims to be "a medium for the discussion of the general problems of the science —characterization, classification, morphology and physiology of the microbes (including protozoa, yeasts, molds and ultra-microscopic organisms), laboratory technique, agricultural bacteriology, industrial bacteriology, sanitary bacteriology, immunology, the bacteriological aspects of human and animal pathology, plant pathology and the pedagogics of bacteriology."

Editorial

CINCINNATI'S NEXT JOB.

WHEN I was asked to give my opinion concerning the Cincinnati Branch Hospital for Tuberculosis, some years ago, I visited it for the first time with the mayor, the safety director and others. I was very much depressed by its squalor and meanness; its nurses' tenement house with its crowded bunks, homemade furniture, tattered walls; the very evident lack of toilet facilities; the knowledge that practically everyone of those pale overworked nurses reacted to tuberculin.

The mayor asked me what I thought of it. I pointed out some of the most glaring deficiencies, and said that the place was a disgrace to civilization. Trembling with anger he replied: "Young man, I want you to remember that forty years ago Cincinnati led the world in the care of tuberculous patients." I asked him then why Cincinnati stopped when she reached the winning post.

IT IS evidently true that our branch hospital was the first municipal institution of its kind established in this country. It was established as a smallpox hospital, and twenty years later turned into a hospital for tuberculosis. It has been the Queen City's step-child ever since. Whenever the branch hospital needed a horse, some worn-out animal from some other city department was sent out; likewise when a wagon was needed. When a bed was required it was secured from the old hospital, which venerable institution naturally sent only what was of no further use to itself. Equipment no longer of value to other city departments was wished onto the branch. It was a motley aggregation of old junk at the time of that visit.

Fortunately, of course, this is not so true today, for thanks to the work of a few zealous organizations, the Queen has been forced to contribute something towards the support of her step-child. About 1906, she spent some good money on two additional buildings, one of which was to be used for smallpox. This would have been adequate to house all the cases of smallpox which would have occurred if the anti-vaccinationists could have had their way. As they did not, it lay idle without heat or equipment for approximately three years and then was devoted to tuberculosis.

In 1910, after a campaign financed by the Anti-Tuberculosis League, bonds were issued for the erection of additional buildings. When these plans were drawn, it represented the first attempt really to plan for the future welfare and growth of the institution. Owing to various delays, it was not until the summer of 1914 that the construction of these buildings was begun. They are now nearing completion and will be occupied during this year. Even with these additional buildings in use the actual capacity for patients is only increased by about sixty beds—though, of course, better and needed facilities for administration are afforded. This small increase in the number of beds will hardly meet the needs of the city for the care of its advanced cases alone.

HOWEVER, judging from the rate of incidence, we can take a chance and let that need rest for a few days, but what we must demand is that proper care be taken of those already housed. These are three hundred of our fellow citizens who are dying slowly. What sort of medical attention do we expect them to get from two physicians and one assistant—an interne who serves twenty-six days? Do we realize that life is sweet even to the tuberculous, and that they cling to the kindly look or cheery word of a physician as drowning men to straws? We jerk the straws away every twenty-six days.

Is it just to these three hundred that they are cared for by only eight graduate nurses and thirty untrained helpers? Is it fair to the nurses, for tuberculous patients require constant attention and the very nature of the work taxes the patience and endurance. *Sufficient rest and leisure is an amulet which must be worn by every nurse.* This is especially true of those who must be intimately associated with advanced cases of tuberculosis. (On some field of battle where the risk is far less many of Cincinnati's heroines would have been decorated for valor.)

At the very least twelve graduate nurses are required for three hundred such patients and provision should be made for extra graduates and trained assistants as demanded in the judgment of the superintendent. It is just as ur-

gent that an immediate increase be made in the staff of resident physicians. There should be at least four so that the patients could hope for more than a "good morning" and a "good night."

THE RACE has grown used to seeing the aged "go into a decline," but none of us can see children suffer. The new children's building at the branch revives one's hopes. Here there are ward and open-air schoolroom accommodations for about fifty children, and it is planned that their life shall be as nearly the ideal of home life as possible. This building is not occupied yet. It will require two nurses and one or two teachers—the latter are to be supplied by the Board of Education. In order to maintain a high grade of efficiency this building should not depend upon a fluctuating budget, but should be endowed. Heretofore there have been very inadequate provisions for about twenty-five children. These have varied from four to fifteen years of age. The Board of Education has conducted an open-air school for them for the past five years. One child, fifteen years old, has spent all of her life, excepting eighteen months, either at the old hospital, where she was born, or at the branch, where she has been continuously for the last ten years.

IT HAS been planned to develop further farming and gardening at the branch. Why not? And why not along with this develop the handicraft work which has been started in a small way by the Antituberculosis League? Last year, with a force of three men and the help of such patients as were willing and able to do light work, the farm of twenty-five acres yielded over $2,900 worth of produce at an approximate cost of $1,300. This produce was used at the branch and general hospital—a clear gain of $1,600 to the city.

Legally we can not force our fellow citizens to enjoy the advantages we have provided for them "way over there," but if for no other motives than the selfish one of self-protection, let us offer them some inducements to go there and stay. Every time an advanced case runs away and comes back to us it means the infection of a number of new individuals. Why not give the poor incipient case of tuberculosis a chance for a summer's sleep in the open air with light outdoor work? Can it be doubted that many such cases would become arrested?

SUNLIGHT and fresh air is free everywhere, but can not be obtained by the bed-ridden tuberculous patient unless he is moved into it. Do we like to contemplate the fact that they have no beds for the solaria at the branch and not enough help to move the patients who enjoy this one thing most of all?

W. B. W.
A. C. B.

Current Discussion

INDUCED LABOR.

CHARLES B. REED,[1] of Chicago, has recently published an article entitled, "The Induction of Labor in Normal Pelves at Term." The author quotes von WINCKEL to the effect that " the child is fully mature in two hundred and seventy-five days of accurately observed time." The date of last menstruation and the time of quickening are the basis of calculation, and, if the date thus determined is in harmony with the anatomical findings, the day for the labor is definitely appointed.

In estimating the maturity of the child considerable importance is attached to the determination of its size and weight. He assumes that a mature child weighs between five and eight pounds. He quotes von WINCKEL'S statement that "a child of more than eight pounds is a post-mature child in 70 per cent. of the cases."

I think it is reasonable to assume that a child weighing eight pounds will not suffer a diminished expectancy from induction of labor. But the minimum weight is entirely too low. It may safely be asserted that of all children weighing five pounds at birth, *more* than 70 per cent. are *premature.*

Labor is induced by introducing a No. 4 VOORHEES bag into the uterus and filling it with sterile water. Pains usually begin within an hour and the first stage seldom requires more than four hours. If pains do not begin promptly a weight of one or two pounds may be swung over the foot of the bed and attached to the bag by means of a tape.

The author was fearful of infection, but his report of a hundred cases proves that his tech-

[1] CHARLES B. REED: Surg. Gyn. Obstet., *22*, 294 (1916).

nique must have been excellent, as only one case developed a serious infection, and this probably not because the bag was used. The infected patient recovered.

Seven babies died. One of these was premature and this death in the opinion of the author is the only one which may justly be attributed to the method. We note, however, that two died from asphyxia. Since a rapid first stage is a frequent cause of asphyxia, it is fair to assume that a method which so markedly reduces the duration of this stage is likely to increase the mortality. There were also two deaths due to the cord being caught between the head and the pelvis. It is hard to avoid the suspicion that the bag may have interfered with the descent of the head and thus caused a prolapse of the cord.

A careful reading of the paper leads one to conclude that it contains only one feature of value. The author has shown that by his method it is usually possible to induce labor promptly with very little danger to the woman. His contention that the induction of labor in practically all cases is "in strict harmony with the principles of modern science" will be challenged by most readers.

He advises a method of delivery for all cases which is not without danger to both mother and child. He induces labor in all instances in order to avoid the dangers which sometimes result in cases which go beyond term. Were there no means of discovering these, there would be some excuse for the author's recommendations, but the careful and competent obstetrician *is* able to recognize these cases.

The majority of women deliver themselves safely. The scientific obstetrician recognizes this and does not interfere in such cases. A serious result to mother or child, due to the unnecessary induction of labor, could with difficulty be justified by the physician, either to himself or to the friends of the woman. On the other hand, to delay the induction of labor until full term in a case in which it is really indicated is equally unscientific, provided earlier interference is indicated.

The author reports two cases of contracted pelves. Both children were delivered with forceps and both perished. If induction of labor was indicated in these cases it should have been done earlier. WM. D. PORTER.

Books Received

STARVATION (ALLEN) TREATMENT OF DIABETES, with a series of graduated diets used at the Massachusetts General Hospital. By LEWIS WEBB HILL, M.D., Children's Hospital, Boston, and RENA S. ECKMAN, dietician Massachusetts General Hospital, Boston. Second edition, 131 pages, 12mo. W. M. Leonard, Boston. 1916. Cloth. Price, $1.00.

SEXUAL IMPOTENCE, by VICTOR G. VECKI, M.D., Consulting Genito-Urinary Surgeon to the Mount Sinai Hospital, San Francisco. Fifth edition, enlarged. 405 pages, 12mo. W. B. Saunders Company, Philadelphia and London, 1915. Cloth, $2.25, net.

THE PRACTICAL MEDICAL SERIES FOR 1915, Volume ix, SKIN AND VENEREAL DISEASES. Edited by OLIVER S. ORMSBY, M.D., Professor and Head of the Department of Skin and Venereal Diseases, Rush Medical College, with the collaboration of JAMES HERBERT MITCHELL, M.D., Research Fellow in Pathology, Rush Medical College. MISCELLANEOUS TOPICS, edited by HAROLD N. MOYER, M.D. 240 pages, 12mo. The Year Book Publishers, Chicago, 1915. $1.35.

NEW AND NONOFFICIAL REMEDIES. Containing descriptions of the articles which have been accepted by the Council on Pharmacy and Chemistry prior to January 1, 1916. 428 + xxii pages. American Medical Association, Chicago, 1916. Price, postpaid, cloth, $1.00.

PRACTICAL MEDICINE SERIES, VOLUME 1, GENERAL MEDICINE, edited by FRANK BILLINGS, M.S., M.D., head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago. 384 pages. The Year Book Publishers, Chicago. 1916. Cloth, $1.00.

BACTERIA AND PROTOZOA, by HERBERT FOX, M.D. director of the WILLIAM PEPPER Laboratory of Clinical Medicine in the University of Pennsylvania, pathologist to the Zoological Society of Philadelphia, etc. Second edition, revised and enlarged; 251 pages, illustrated with 68 engravings and five colored plates. Lea & Febiger, Philadelphia and New York, 1916.

PULMONARY TUBERCULOSIS, by MAURICE FISHBERG, M.D., Clinical Professor of Tuberculosis, New York University and Bellevue Hospital Medical College; attending physician Montefiore Home and Hospital for Chronic Diseases, New York. vii + 630 pages, illustrated with 91 engravings and 18 plates. Lea & Febiger, Philadelphia and New York, 1916.

MEDICAL PRACTICE—A Treatise, by OTTO JUETTNER, A.M., Sc.M., Ph.D., M.D., author of "Modern Physio-Therapy," "Physical Therapeutic Methods," "DANIEL DRAKE and His Followers," editor of the "Songs of the University of Cincinnati," surgeon Medical Reserve Corps, United States Army, etc. viii + 519 pages. A. L. Chatterton Company, New York, 1916.

Societies and Academies

CINCINNATI HOSPITAL LECTURE.

LATENT Syphilis" was the subject of a very interesting discourse at the General Hospital, April 14, by Dr. A. Scott Warthin, Professor of Pathology in the University of Michigan.

He graphically pictured the condition of a man who had become infected with lues ten or twenty years previously, the result of which may first become noticeable after that interval, in premature senility and the changes incident thereto. The change has been so insidious as to escape the attention of the patient and his friends. He has been under treatment, and is apparently free from any syphilitic lesions. "But," said Dr. Warthin, "we now are cognizant of the fact that no therapeutics ever really cured a case of syphilis." In other words, observed the speaker, there is no cured case of syphilis. The best evidence of this is the slowly progressive change going on in the patient, shown most markedly in the lungs, the kidneys, the vascular system and the myocardium, which so often terminates suddenly. Years of observation in the autopsy room have convinced Dr. Warthin that the tissues of a syphilitic are "tougher." There are changes, too, in the dura mater, in the nervous system, in the heart. The speaker was positive in his assertions that every patient with latent syphilis shows pathological changes in the tissues. To this there is no exception, whether the patient has been clinically treated or has been neglected.

Dr. Warthin laid most stress on the changes in the myocardium due to syphilis. He scarcely touched on the subject so dear to the heart of the average pathologist, gummatous foci, but spoke at length of the fibroid induration which was really a reparative process of nature, in which, however, were always found the spirochetes, if a proper and painstaking search was made. He said previous to 1905 we had no means of diagnosing syphilis of the heart, save by the presence of gumma. We find now plasma cells, mononuclear in character; we find a new significance in the presence of fibroblasts. In such histological changes there are observed a large number of spirochetæ pallidæ. As a result of our late investigations we have had to rewrite the subject of syphilis.

Dr. Warthin showed on the screen some excellent pictures of pathological conditions of the myocardium incident to latent syphilis. He said Opie and others always speak of gumma as being the only evidence of syphilis of the heart. Present-day investiatgors have noted changes which precede the gummatous foci.

Dr. Warthin said that in aortitis (excepting when of congenital type) the spirochetes are always found in the adventitious tissue and never primarily in the intima. There are no gross changes to differentiate between ordinary aortitis and syphilitic aortitis. The microscope tells the tale.

The speaker described the symptom-complex known as diabetes, and entered into the pathological changes in the pancreas. His findings amplified his views concerning syphilitic myocarditis. The spirochetes were present in great number in the interstitial tissue. He illustrated in detail the histological findings in seven recent cases of diabetes he had observed. The islands of Langerhans were diminished in number. They die out and disappear. Dr. Warthin emphasized the fact that every pancreas is seriously affected in latent syphilis. This disease is the most common cause of chronic interstitial pancreatitis. The speaker pointed out that often hypertrophy of the acini are found. Besides, the ducts show marked proliferation.

Dr. Warthin said in order of frequency the lesions in latent syphilis are most marked in (1) the heart; (2) the aorta; (3) the pancreas; (4) the testes. He had observed marked changes in the germ cells in the testes. Dr. Warthin is led to the conclusion that syphilis may be communicated directly by means of the spermatozoa.

Dr. Warthin touched briefly on alterations in the adrenals.

The speaker emphasized particularly that wherever he had found infiltration of cells in latent syphilis he had always located the spirochetes. He said that formerly we had paid little attention to these infiltrations. He said that fibroplastic tissue which does not become hyaline is always associated with spirochetes. Anticipating a question whether these supposed organisms are not in reality fibrillae he said it is a poor medical student who can not distinguish a fibrilla from a spirochete.

Dr. Warthin wanted those present to remember especially that a negative Wassermann reaction very often is perfectly useless. He, and doubtless many others, had observed the spirochetes present in spite of the negative reaction. He said that really no person can be sure he is free from syphilis until he is sectioned. We physicians are not *curing* syphilis. We are simply making of it a latent process.

Dr. Warthin almost reluctantly asked the question, What can therapy do at the stage just described? The treatment such as it is must be intensive and over a long period of time. He reiterated that our cases are not being cured. Dr. Warthin pointed out that we do not read in books devoted to a consideration of syphilis about the hygiene of syphilis as we read about the hygiene of tuberculosis. We must teach a similar hygienic line

of treatment. We must always recollect, too, that intercurrent infections of various kinds often render the latent condition an acute one.

Dr. Warthin said it was a remarkable fact that lesions in a woman are very much slighter than in a man. He had never observed any such in the ovary or the uterine adnexa. "As far as that is concerned the prostate is also immune."

Dr. Warthin could not resist the temptation to ridicule out of court the utopian idea of some legislators of giving a marriage certificate to the intending bride or groom on the evidence of a negative Wassermann reaction.

ACADEMY OF MEDICINE, CINCINNATI.

"DEVELOPMENT of the Tuberculosis Crusade and its Needs" was the topic ably presented April 17, by Dr. David R. Lyman, superintendent of the Gaylord Farm Sanatorium, Wallingford, Connecticut.

Medical men, said Dr. Lyman, have for some time realized that the ultimate control of tuberculosis can never be reached by the medical profession alone. Other agencies must assist. As a result the general public is being educated in a manner which is very gratifying.

The first sanatorium was established with the idea in the minds of its founders of curing the patient. Now we preach the gospel of prevention and hygiene. The medical profession was woefully ignorant of what symptoms in the body politic tuberculosis implied. We learned, for instance, from patients asking for sanatorium treatment that they came from homes having other cases of tuberculosis. We began to suspect, as a profession, that the problem was not only medical but economic. In our zeal for bettering the condition of the afflicted, we built hospitals and established clinics and dispensaries. We found that this only partially relieved the situation. After much trial and tribulation, the happy idea struck us to engage the visiting nurse. We found her the best agency yet devised for the suppression of tuberculosis. She found cases unrecognized by the family or friends. She followed up discharged cases. She assisted in home treatment. She taught more than the rudiments of prevention and hygiene and ventilation and cleanliness; she taught it, too, where there was the best chance for touching the home. The result has been most satisfactory to every lover of humankind. The unfortunate thing was that the more cases that were discovered and treated, the more remained to be discovered. It is appalling how many people are in the pretubercular and first stages of the disease. The saddest part of the crusade, perhaps, is that the children are found so much more frequently afflicted than had been surmised by even the greatest authorities on the subject.

And so the need is brought home to us for more sanatoria for advanced cases; of dispensaries and clinics for those in the first stages, and of visiting nurses to handle the cases. We should enlarge our facilities, especially to treat adequately the children. Dr. Lyman reiterated this latter assertion. He said tuberculosis was essentially a disease of childhood. Inquiries were sent out, he said, and the data collected about enlarged lymph nodes, about bronchopneumonia as a precedent to pulmonary tuberculosis, about other infectious diseases predisposing to tuberculosis, and about the many crooked backs and affected hips, were appalling, indeed. Four thousand five hundred bone and granular cases were found right in Connecticut, and but sixty-five beds for these cases. Here lay the greatest defect in their campaign for the suppression of tuberculosis. Funds are needed to provide the proper facilities for treatment.

Dr. Lyman then dwelt on an encouraging feature of the tuberculosis crusade in his own State, by explaining the establishment and the successful efforts put forth by the employees' relief association. These are seven in number, the largest one being in New Haven. These associations represent about 30,000 men and women. Dr. Lyman explained the inception of these societies in the factories and shops of the towns and cities, and how, as their feasibility began to be recognized, the workers enlarged their scope. Dr. Lyman explained that the necessary funds were contributed by the employees and that usually a sum equal to these contributions was given by the employers, who soon appreciated the sound business reasons for the establishment of these associations. This money was first used in paying for treatment in a sanatorium or hospital. Now relief work is done. The famililies of tuberculous workers are assisted when in need, whether they contribute to the fund or not. Now that these associations provide family care, institutions can keep other cases twice as long as formerly. Hence the badly afflicted can be kept longer from their families to prevent their infecting others.

Dr. Lyman dwelt feelingly on the great good accomplished by these employee's relief associations. He said that formerly self-respecting patients refused to enter hospitals and sanatoria because they could not bring themselves to become public charges. But now, as members of these relief associations, they feel they have contributed, are in good standing, and can properly accept assistance.

Dr. Lyman said the successful operation of these relief associations has pointed the way to an imperative and, he believed, an inevitable reform. This is simply compulsory health insurance. He said we must insist on the compulsory health insurance ere

we can expect much result. Dr. Lyman here entered into the benefits to be derived by employer, employee and public, benefits which the readers of the Lancet-Clinic will doubtless hear discussed to the exclusion of much worn-out therapeutics, etc., during the next year or two.

Dr. Lyman said there is a rapidly growing sentiment among Eastern business men in favor of compulsory health insurance. The successful operation of the workmen's compensation laws in the various States has paved the way.

"We must see," said the speaker, "that the medical profession is properly treated, both as to burdens and benefits. Medical societies throughout the country should study the subject thoroughly, so that the members may become conversant with every phase of it."

Dr. Lyman could not refrain from again referring to some of the great benefits to be derived from compulsory health insurance; periodical physical examinations, the immunity from want during treatment, the systematic supervision by competent men, the inestimable assistance of the visiting nurse, the happy work done by social service agencies and the resulting rise in the standard of life among the toilers.

The speaker warned his auditors that the medical profession needed to study the tuberculosis problem more thoroughly than it has in the past. Do physicians know the exact relation of human and bovine tuberculosis? Do they know the relation of the various trades to tuberculosis? Do they know that women doing housework furnish the greatest number of cases of tuberculosis? Are they aware that coal miners, in spite of the dust which is supposed to grind their lung tissues, are really least inclined to tuberculosis, and that office workers in what seem dustless rooms are most affected men?

Dr. Lyman said that the study of the industrial situation in relation to tuberculosis and the resultant survey undertaken by the United States Public Health Service in Cincinnati is being watched in the East, and that the people in this great State are anticipating much benefit from the published data." 'It was very gratifying to know" said the speaker, "that the survey is being undertaken on the request of the Cincinnati Academy of Medicine, and the Cincinnati Anti-Tuberculosis League."

THE Necessity of Adequate Hospital Care for Consumption and of What that Consists," was the next phase of the subject to be discussed. It was ably handled by the second invited guest, Dr. H. J. Hawk, superintendent of the Metropolitan Life Insurance Company Sanatorium, Mt. McGregor, Saratoga, New York.

Dr. Hawk declared that since Trudeau began his work in Saranac Lake we have learned (1) that tuberculosis is curable; (2) that advanced cases can be arrested and then lives be prolonged; (3) that under proper supervision the sick and the well can live together without danger; and (4) that institutional care of consumption has had an almost incredible effect on the entire tuberculosis situation in the country.

Dr. Hawk spoke of the immense influence which the cured patients coming from the Metropolitan Life Insurance Sanatorium exert in the various communities to which they return. He took it for granted that the members of the Academy understood that the sanatorium in question was established to treat the tuberculous agents and other workers among the 16,000 employees of the company. The knowledge of the value of adequate hospital and sanatorium treatment is thus becoming disseminated over the entire country.

Dr. Hawk ran counter to the accepted teaching when he declared that infection is not so easy as is usually surmised. He thought that if members of a family in which there was a tubercular subject were infected with the disease as easily as the alarmists would like to have us belive, then tuberculosis would be in danger of wiping out the entire human race. "Let us take a sane view of the matter" said the speaker.

Dr. Hawk referred to the work done by Bangs of Copenhagen, in the study of bovine tuberculosis, Bangs has decided that butter from a tuberculous cow can spread the disease.

The speaker referred to the local tuberculosis situation as encouraging. He said a larger proportion of policy-holders from this region become infected with tuberculosis than from any other city in the State. He said the negro problem complicated the situation because of their susceptibility to the disease. He said he had been informed by the health officer of Cincinnati that the city had a large percentage of native population which does not migrate readily. In the lake cities there is more of a floatingg population, which is made up, perhaps, by a more vigorous and ambitious stock.

Dr. Lyle was asked to open the discussion. He said he wanted to emphasize the point that infection and disease are not synonymous. He said more clinical latency prevails in tuberculosis than in any other disease. The great factor in the crusade was to look out for the latent cases. We have ambulant cases which like "Typhoid Mary" are spreading the infection with terrible effect. In referring to the factory "inspection" which has been undertaken locally to curb the disease, he asked how it is possible to recognize the early physical signs with the machinery of the factory in full operation, or when the heavy street cars rumble along the thoroughfares. He had personally seen far advanced cases

which a short time previously had been given a clean bill of health by these "inspectors." Dr. Lyle thought he could account for the great prevalence of tuberculosis in our city by the fact that we are in a basin. The winds do not carry away the dust and smoke and infectious material as is generally the case in the lake cities.

Dr. Dunham said that the control and eradication of tuberculosis was essentially a social problem. We must consider the protection of the child and the segregation of the adult. In reference to the proposed health insurance law he said that the possible exploitation of the medical profession must be considered. However, he thought health insurance the answer to the tuberculosis problem now confronting the profession and the public.

Dr. Wolfstein said that the hospitals in the United States are largely pauper institutions. He spoke of the admirable result of the establishment of the *Kranken Kassen* of Germany. These are supported by those who derive benefits therefrom. Only about 5 to 10 per cent. are indigent or careless, and do not contribute to the relief fund. We have yet to learn that indiscriminate charity is an evil. People should be educated to help themselves with regard to securing medical relief, as has been the vogue the past forty or fifty years in Germany.

Dr. Rockhill asked what diseases examining physicians most often fail to recognize, "fall down on," as the term goes? The answer is, tuberculosis. As a profession we ought to learn how best to induce medical colleges to teach something more than the routine stuff imparted to students. He reiterated the statement that physicians are not really conversant with the subject of tuberculosis. In referring to hospital treatment he said that the very poor have as good treatment as the very rich. Dr. Rockhill asserted that 60 per cent. from the class termed the very poor nd 15 per cent from the very rich can go anywhere to be treated. The remainder belong to the middle class—the most neglected and yet the most important members of the community. What shall we do with them? Dr. Rockhill said we should demand more beds for this great middle class in sanatoria erected for their benefit. This class does not want charity. He expressed the hope that compulsory health insurance would do substantial justice to all concerned.

COUNCIL OF SOCIAL AGENCIES.

At the meeting of the Council of Social Agencies, held April 15, in the assembly rooms of the Chamber of Commerce, Dr. Boris Bogen, superintendent of the United Jewish Charities, presented a plan for a school of social service, to be held under the auspices of the Council of Social Agencies. His recommendation follows:

"The School of Social Service of Cincinnati is intended for persons who are in the field of practical philanthropic effort, or those who intend to enter social service, either as volunteers or as paid workers. The proposed course of study comprises three years, including the theoretical aspects of social service as well as the direct information for practical application. It is the intention that the latter part of the course is to be supplemented by actual experience in connection with the different agencies of the city and State.

"The school is to be established in aswer to the demand for training in social service, a field that is attracting a large number of individuals enthused with the desire to serve the community. It is evident that this social awakening should be properly utilized, lest, if misdirected, it may lead to negative results. It stands to reason that the Council of Social Agencies undertaking to control and supervise the social service efforts of the city is the logical agency to initiate this particular activity.

With the co-operation of expert workers already in the field, the expenses in the very beginning ought not to be very great.

No provision need be made for rooms for the supposition is that the school can utilize some of the existing facilities in connection with other social service agencies. Cincinnati presents ample opportunities for the proper training of social workers. There is a constant demand for professional talent. In many instances the city is unable to get workers from the outside, and with the proper school facilities Cincinnati will surely be able to meet her own demands. The course of study as proposed is as follows:

COURSE OF STUDY FOR THE SCHOOL OF SOCIAL SERVICE.

A. Social Service.

First Year.—Social service problems of modern society; social organization and waste; modern tendencies.

Second Year.—History of evolution in social service; motives, systems, and achievements.

Third Year.—Analysis of waste in modern society; collective and individual efforts at work for its elimination.

B. Social Organization.

First Year.—Evolution of society, clan, tribe, family, nation, etc., organization of government.

Second Year.—History of economic relations; present economic doctrines and their relation to social service.

Third Year.—Different systems of government; social movements; social legislation and its bearing upon social service.

C. Social Psychology.

First Year.—The old and the new psychology and their application to social service.

Second Year.—Psychology of the group and its significance in relation to social service.

Third Year.—Pathological psychology, feeble-mindedness, insanity, crime.

D. Social Administration.

First Year.—Collection of data; tabulation; use of material.

Second Year.—Accounting; budget making; records and reports.

Third Year.—Organization and administration of social service agencies, private, state, and national.

Optional Courses.

1. Relief societies.
2. Infant welfare work.
3. School welfare work.
4. Welfare work in industry.
5. Juvenile delinquency.
6. Institutional management.
7. Tuberculosis and health agencies.
8. Immigrant welfare.
9. Vocational guidance.
10. Church social service.

The Council of Social Agencies referred the matter to a committee, with instruction to work out methods of operation, details of the course of study and a practical way of using the co-operative method of instruction.

CINCINNATI HOSPITAL MEDICAL LIBRARY.

THE report of RUTH BRADLEY DRAKE, librarian, to the Library Committee for the month ending March 31, 1916, contains the following interesting items:

Accessions:

Gifts	452
Journals (unbound)	242
Books	71
Pamphlets	139
Society transactions	6
Hospital reports	23
Monographs	9
Catalogues and announcements of medical colleges	28
Public health reports	17
Reprints	49
Miscellaneous	7
Total	452

Reading and Reference Room.

Material was looked up and reserved on the following subjects:

Agglutinaton of bacteria with acids.	Penetrating wounds of the abdomen.
Coagulation of blood in pernicious anemia.	Puerperal mania.
Cysts of the thymus.	Sarcoma of the lungs (*x*-ray aspect).
Diabetic neuritis.	Sclerema in infancy.
Exophthalmic goitre.	Secretion of cerebro-spinal fluid.
Gall-bladder surgery.	Streptococcus viridans.
Infant feeding.	Typhoid fever (vaccine therapy).
Localization of function in cerebellum.	Uncinariasis.
Lung stones.	Visceroptosis.
Pathology of bones and joints.	

Typewritten bibliographies were made on the following subjects:

Brachial palsy.	Prostitution (regulation).
Divorce (medical aspects).	Salivary calculi.
Epithelioma of skin.	Syphilis.
Gonorrhea (treatment).	Venereal diseases (control).

General Remarks:

During the month copies of the Library "Suggestions and Rules for Patrons," were mailed to 965 physicians of Cincinnati and vicinity.

Owing to the over-crowded condition of the stack rooms and the growth of the Library, it was found necessary to equip another basement room with shelving.

List of Donors.

	Volumes or Pamphlets
Academy of Medicine of Cincinnati	4
Albany Medical Colege	1
American Association of Genito-Urinary Surgeons	1
American Surgical Association	1
Associated Jewish Charities of Chicago	1
Atlanta Medical College	1
Bachmeyer, Dr. A. C., Cincinnati	1
Bainbridge, Dr. W. S., N. Y. C.	8
Bethesda Hospital, Cincinnati	1
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Reports of the United States Public Health Service show that pellagra caused 8,000 deaths in this country in 1915.

"The man who wants to really live should watch his waist measure and his chest expansion with at least the same attention which he bestows upon his bank account."—Pennsylvania State Commissioner of Health.

Notes and News

LOCAL

Dr. Fennel Coppock, former interne of the Cincinnati General Hospital, is the new resident physician of the Christ Hospital.

Dr. Clarence Betzner has been appointed assistant resident physician at the Cincinnati General Hospital.

Dr. Jean Weidensall, of the Bedford Hills Reformatory, is the new instructor of nurses in psychology in the Cincinnati General Hospital.

Guy Samuel Adams of 2544 Vine Street believed in the efficacy of the "laying on of hands" as a cure for the ills accompanying acute nephritis, refusing medical aid. As a result he has gone to that bourne from whence no traveler returns.

The Board of Education will inaugurate next September, in the Cincinnati General Hospital amphitheater, a series of lectures for the training of public school teachers in hygiene and physical development.

Old "Sam" who for fifty-seven years has been the ambulance driver for contagious cases at the Cincinnati Hospital is himself seriously ill in the institution he has so long served.

Dr. Reemelin is encouraging the pre-medical students at the University to organize a pre-medical club, to discuss the bearing of their studies on the profession for which they hope to fit themselves.

Major E. L. Ruffner, of the medical corps, United States Army, spoke on "Medical Preparedness," in the amphitheater of the Cincinnati General Hospital, April 20.

Dr. K. L. Stoll, of this city, who was on his way to join the German Red Cross Society, and who was taken from the ship on his way to a German port, has been removed to a British detention camp until the war is over. Hopes had been entertained by the Cincinnati friends of Dr. Stoll that he would be permitted to return to this country.

OHIO

Health Department officials of Cleveland have sent out final notice to over six thousand department and tenement house owners who have failed to take out the 1916 dollar license.

The number of cases of measles quarantined at Youngstown, since January 1, now exceeds the 2,500 mark.

The scarlet fever situation in Dayton is much improved according to the report of the Health Commissioner of that city.

GENERAL

On March 1, Michigan had 7,424 known cases of tuberculosis.

Forty-one Chicago physicians constitute the charter roll of the Chicago Society of Medical Research, which was organized recently.

The Naval Medical School, Washington, D. C., will hold its closing exercises Wednesday, April 12. Secretary of the Navy Daniels will deliver the school certificates and address the class.

The epidemic of measles at McKeesport, Pa., has broken all records. In March 750 cases were reported to the health bureau, an average of twenty-four a day. Eight deaths have resulted from the disease.

Of the 443 members of the medical corps of the United States army, only 292 are now in the United States. The rest are overseas and not available in case of trouble.

Assisted by competent women interested in advanced economics, the United States Public Health Service is conducting a survey on the working conditions of women in Wisconsin.

At the twenty-eighth semi-annual meeting of the Medical Society of the Missouri Valley just held at St. Joseph, Mo., it was decided to make Omaha the next convention city. September 21 and 22, will be the dates.

Dr. William Scott Wadsworth, a coroner's physician of Philadelphia, has just completed seventeen years' service in the coroner's office. It is estimated he has made 5,500 autopsies, a record probably not exceeded by many physicians in the country.

The milling interests of the Northwest have assailed and asked for the withdrawal of the recent report of Dr. Rupert Blue, Surgeon-General of the United States Public Health Service, declaring that highly milled bleached flour in common use is deprived in milling of elements of nutrition and often is deficient in essential food substances.

The temporary injunction restraining the locating of a Kane County, Ill., tuberculosis sanatorium at Geneva, was argued last week in the circuit court at Geneva before Judge Mazzini Slusser. The fight really centered about a contention made by the city that the value of the adjacent property would be lowered. The Geneva council recently passed an ordinance under whose terms the sanatorium should be considered a nuisance. The injunction was dissolved.

Dr. H. J. Haiselden has gone into the movies. The Chicago physician who leaped into notoriety by refusing to perform an operation that would have saved the life of Baby Bollinger is said to have concluded a contract for a year's services for a Minneapolis film exchange. One of the owners of the Strand theater, St. Paul, is reported to have signed the contract in which he agrees to pay Dr. Haiselden $25,000 to appear in a five-reel motion picture and fill a large number of lecture engagements.

According to figures given out at the office of the New Jersey State Department of Health there were 3,838 deaths tabulated as occurring in New Jersey during February, 1916, 3,793 being of resident and forty-five of non-residents, which gives a resident death-rate of 15.60 for one year, 258 deaths of children over one year and under five years, and 1,376 deaths of persons, aged sixty years and over.

The Health Commissioner of New York City, in a report just given out, declared that purification of the Croton water supply and effective pasteurization of the milk supply had reduced the number of cases of typhoid fever from rural sources in the greater city from 50 per cent. in 1905 to 20 per cent. in 1915. The Commissioner says that his figures support the contention of the health department that up to the present time the typhoid fever of most of the large cities of the country is of rural origin.

While the European war will operate to prevent the attendance of many famous European scientists at the meeting of the American Medical Association in Detroit next June, there will be a big increase in attendance from South America, Cuba, the Philippines, Japan and China. The war is compelling thousands of European physicians and surgeons to serve their respective armies, but it has also shut off European traveling and study by South American and other neutral nations; physicians, and many will make the Detroit trip instead.

At the final session of the community institute at Columbus, Ind., last week, Dr. Florence Brown Sherbon, of the Children's Health Bureau gave a report of her work in examining children here during the week just closed. Eighty-two children were ex-

amined, forty-six being boys and thirty-six girls. These children, all under six years of age, represented seventy-one different families. Forty children were found improperly nourished; forty-one had defective teeth; sixty had diseased tonsils; twenty-three had some affections of the nasal apparatus; twenty-three had adenoids and thirty had enlarged cervical glands.

A circular has been issued to members of the Lake Carriers' Association by President Livingstone, advising them that drinking water served crews of boats must be pure. Drinking water tanks of lake vessels must be filled from the lake areas which have been proved by government analysis to be pure, and an independent seacock, independent pump and piping with steam jet connection to the seacock for sterilizing purposes should be a part of each boat's equipment, he says. Several lines have already made provisions to insure a pure water supply for crews of their vessels.

NECROLOGY.

Dr. Emory Burr Huyck, aged fifty-three, Oak Harbor, Ohio, March 20.

Dr. Robert S. Hart, aged seveny-three, Woodford County, Ky., March 21.

Dr. Walter H. Merriam, aged forty-eight, Cleveland, Ohio, March 28.

Dr. Henry K. Deen, aged seventy-five, Central Indiana, February 23.

Dr. Lexor B. Snow, aged sixty-nine, Cleveland, Ohio, March 16.

The Calendar

Academy of Medicine April 24.
Case Reports.

West End Medical Society, April 25.
Importance and Prophylaxis of Disorders of Speech and Voice in School, Dr. D. H. Abbott.

University Medical Association, April 26.
The Signs and Symptoms of Decompensation of the Heart, Dr. Julien Benjamin. Meets at Sinton Hotel.

Ohio State Medical Association, Cleveland, May 17, 18 and 19.

Ohio Hospital Association, Cincinnati, May 24 to 26.

Union District Medical Association, Liberty, Ind., April 27.

The Lancet-Clinic

A Weekly Journal of Medicine and Surgery.

MARTIN H. FISCHER, M.D.
ANTHONY G. KREIDLER, M.D. } *Editors*

¶ *The advertising pages of the Lancet-Clinic conform to the Rules of the Council of Pharmacy of the Americal Medical Association.*

¶ *Manuscripts, books, et cetera should be addressed to The Editors of the Lancet-Clinic, General Hospital, Cincinnati. Business communications should be addressed to The Business Manager of the Lancet-Clinic, 648 Main Street, Cincinnati.*

¶ *Contributions are accepted for publication with the understanding that they are contributed solely to this journal. Manuscript should be typewritten and on one side of the sheet only. Photographs or drawings, when necessary to the text, must accompany the manuscript. Letters to the Editors on matters of medical or surgical interest will be welcomed. Anonymous communications are ignored.*

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¶ *Do not abbreviate. The editors will do this for you because it must follow a uniform style.*

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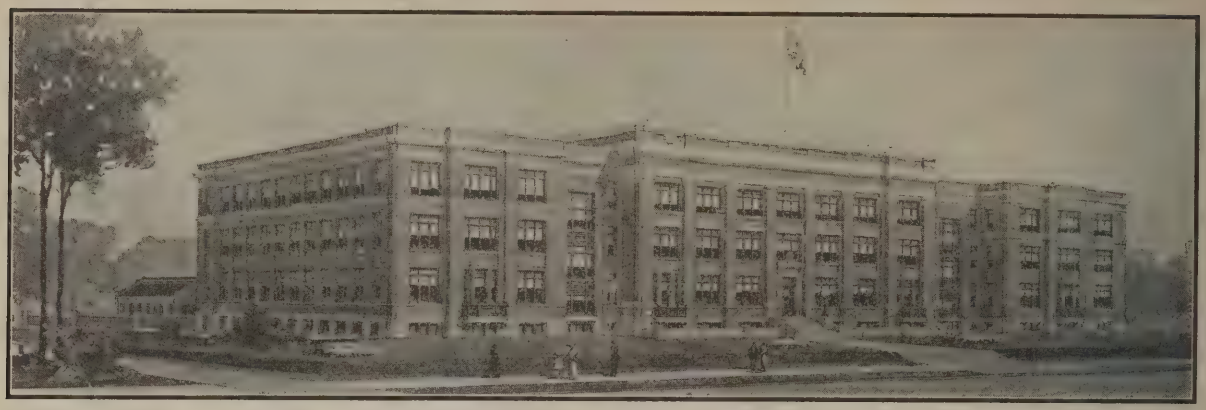
University of Cincinnati Medical Department

(Ohio-Miami Medical College)



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For detailed information and catalogue, address the DEAN OF THE MEDICAL DEPARTMENT, UNIVERSITY OF CINCINNATI, Cincinnati, Ohio.

The Lancet-Clinic

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A Weekly Journal of Medicine and Surgery.

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Vol. CXI. CINCINNATI, MAY 9, 1914. No. 19.

THE PROFESSION AND THE PUBLIC.

The Medical Times has published in its editorial columns seven signed replies to the query, "What Should Constitute a Standard of Ethical Publicity?" It is curious how many of those who discuss the subject should have missed the significance of the question, and discuss it simply from the standpoint of the individual physician seeking "newspaper notoriety." Two replies stand out from the barrenness of the other five for the breadth of the view taken, and for the fact that they recognize that the medical man should be an altruistic citizen even before he is a physician.

The first of these replies that merit commendation is from the veteran, John A. Wyeth, whose life of wide experience has given him the stereoscopic vision that penetrates to the depths of things. Dr. Wyeth writes:

In my opinion, the relation of the physician to the public—and by the public, I mean that great mass of the people not closely in touch with medical affairs, which can only be reached through the lay press or the lecture platform—should be left to the conscience, the sense of propriety and the dignity of the individual. I have always held that our first duty as teachers was to try to instruct the people how to avoid disease, rather than adminster remedies as curatives. When a member of our profession has by his attainment won the confidence and the respect of his fellow-practitioners and of the community, he falls short of his full measure of usefulness if he keeps the benefit of this valuable experience from his fellow man. It goes without saying that this should be done without a thought of present exploitation or notoriety. No physician of character, whose opinion is of real value, would lend himself to such a base or selfish purpose. The lay press has the opportunity to do an invaluable service in conveying the simple truth of medical progress to the people, and when our proprietors and editors are courageous enough and conscientious enough to do this in plain terms stripped of sensationalism, they will have made a great advance in altruism. The ideal method, in my opinion, is that pursued by the New York Sun, the editorial columns of which are devoted to the enlightenment of its readers on all matters relating to the public health. Each of our influential journals should have a medical editor.

Aye, there it is. One of the crying needs of the hour is a medical editor for each one of the metropolitan dailies of wide circulation. It has been done by a few; it is being done by more, and it should be done by all, both for the sake of their own reliability as news furnishers to the people, and for the sake of the people at large who are seeking as never before for some knowledge of the laws of health, and who want to know of the advances in the medical sciences as much as they want to know of the advances in electrical engineering, wireless telegraphy and the musical arts. We must not forget that just because the people have been deprived of any reasonable knowledge of biology, human physiology and human pathology they are now floundering in the contradictory absurdities and pernicious mysticism of Christian Science and the other faith cure cults. The grossest absurdities appeal to and convince these people, and it is hopeless to attempt to turn the ignorant adults of this generation from their obsessions.

In this country, however, the daily and magazine press is a mighty engine for education, and it is absolutely incomprehensible that the profession should have neglected its opportunity, yielding the mightiest weapon yet known to civilization to the ignorant, the mystic and the quack, to the detriment of the profession and the people.

Dr. J. W. Pettit, the medical director of the Tuberculosis Colony, of Ottawa, Ill., voices what should be the true spirit of the profession, and amplifies and particularizes the principles laid down by Dr. Wyeth. He says:

There are many things connected with our professional work of which the public has a right to know, and there are also many of which they have no right, and it would be a violation of professional confidence to make public. Just how and to what extent the medical profession may use the secular press legitimately can not be formulated by rule. Good judgment and good taste must govern in this matter as in everything else. The traditions of the profession with regard to advertising should be preserved, but let us make a distinction between principle and method, and not make ourselves the subject of criticism and ridicule by contending for the per-

petuity of methods which are obsolete. Is it not a wrong application of a correct principle when we make it unethical for a physician to discuss medical topics in the secular press or cast suspicion upon him because his name happens to appear in a newspaper column? Such criticism, although recognized by men engaged in philanthropic work as unjust, has a decided tendency to handicap them in their work; and the embarrassment which every man feels who is judged as lowering the ethical standards of his profession, no matter how unreasonable such criticism may be, has a decided tendency to make him shirk from a public duty which he would otherwise regard as a pleasure and a privilege. Some medical societies have gone so far as to pass resolutions demanding that newspapers shall not print their names. Such action is ridiculous, and is an unwarranted attempt to dictate, which always results in a well-merited rebuke on the part of the press. The united action of the press and the medical profession in the crusade against tuberculosis is a striking example of what can be done by a union of forces which had hitherto stood apart. By the aid of the press we have accomplished more within a few years than could the medical profession unaided by the press in a quarter of a century. In any readjustment of our relation to the press in this matter we must bear in mind that we incur a great risk of bad men in our own profession misusing this privilege to the disadvantage of the public and the discredit of the press and the medical profession. Indeed, this is just what will occur unless we apply some practical safeguard. The remedy is simple and can without question be made effective. A bureau of medical information under the auspices of the American Medical Association can be organized which shall furnish information to the press free and also censor advertising matter. This will simply be enlarging a function of the Association which is now operating on a comparatively small scale.

The time is ripe for such action as these men point out and it is to be hoped that such principles as these will govern the profession in the future.

CHAPIN'S POSITION ON HEALTH MEASURES.

Under flaring headlines, not so very long ago, the daily press exploited one of those ridiculous and pernicious blunders of the frequently untrained scribe who is sent to report medical meetings or meetings at which medical men speak. This particular blunder was the having Dr. Charles V. Chapin, Superintendent of Health of Providence, R. I., announce himself publicly as refusing to accept any of the modern advances in the medical sciences as they apply to sanitation and hygiene. Coming from Dr. Chapin, this gave much comfort to Christian Sciencers, Faith Healers, *et id genus omne*. The anti-vaccinationists were particularly jubilant. As usual, however, these illy-educated people were short on the facts of the case. Dr. Chapin, who has maintained a dignified silence so far as the daily press is concerned, has just written to Dr. J. H. Landis, Health Officer of Cincinnati, as follows:

"I can not help thinking that the newspaper man who reported my Harvard lecture deliberately intended to deceive the public, for no intelligent person could have possibly deduced from what I really said the absurd remarks attributed to me. It is true that I did advise the young men who are attending the school for health officers to examine for themselves into the evidence on which is based even the most generally received theories of sanitation. Although it hardly seemed necessary to such an audience to define my own position, I did say that there was an abundant and unquestioned evidence strong enough to meet every scientific requirement that vaccination does protect against smallpox, antitoxin does cure diphtheria, a polluted water supply does cause typhoid fever and that district nursing reduces infant mortality, and so forth. If I did not believe that these and similar principles were absolutely established, I would give up all connection with public health work."

All this is given not because any medical man believed the absurdity of the Associated Press despatch, but to put on record a statement that can be used to refute newspaper quotations. Late events in Philadelphia show that unscrupulous neurotics are perniciously active at present.

In the Chicago Medical Recorder for April is a most interesting abstract with comments of the details of the Abderhalden reaction. This is the work of a valued Chicago contributor to The Lancet-Clinic, Dr. Bayard Holmes. The recent work of Abderhalden, as set forth in his "Abwehrfermente des tierischen Organismus" brought out in December, 1913, is of such intense interest and has attracted such wide attention in the medical press that it behooves every physician to acquaint himself with the underlying principles of the reaction and a knowledge of, if not the actual practice of, the laboratory procedures.

NEWS NOTES.

Henderson County, Ky., has made an appropriation of seventeen hundred dollars for the purchase of a site for a tuberculosis sanatarium.

The American Proctologic Society will hold its sixteenth annual meeting at Atlantic City, June 22 and 23, 1914, with headquarters at Hotel Chalfonte.

Darke County, Ohio, Medical Society will meet at Greenville, Ohio, May 14, 1914. A most excellent program has been arranged, and a large attendance is assured. Dr. Charles L. Bonifield, Cincinnati, will read a paper on "Constipation"; Dr. O. G. Pfaff, Indianapolis, will speak on "Gall-Bladder Disease," while "Anterior Poliomyelitis" will be the subject treated by Dr. R. H. Spitler, Greenville, Ohio.

A despatch from Paris says: A paraffine wax bath, heated to 125° F., is a new treatment for rheumatism, sciatica, gout, and kindred ailments, as described by Dr. Bartha de Sandfort at the Academy of Medicine. To test his own cure the doctor went to an oil refinery and got into a vat containing 100 gallons of wax at a temperature of 130° F. Not only did this cause no burning, but it resulted in a pleasant sensation.

In order to enhance the usefulness of the Department of Health of New York City to the community, the Commissioner of Health, Dr. Sigismund S. Goldwater has organized an advisory council composed of representatives of State and city departments of social and philanthropic organizations, business men's associations, labor unions, medical societies, women's organizations and communal groups. The following-named men have consented to act as chairmen of departmental committees: Dailey B. Burritt, chairman of committee on food inspection; Dr. Louis I. Dublin, chairman of committee on records; Dr. Simon Flexner, chairman of committee on laboratories; Homer Folks, chairman of committee on child hygiene; Dr. Lee K. Frankel, chairman of committee on public health education; Dr. John H. Huddleston, chairman of committee on infectious diseases; Professor C. E. A. Winslow, chairman of committee on sanitation.

Betterment of health conditions among negroes was the subject of a conference held in New Orleans, April 24 and 25, 1914. The call was issued by the Louisiana State Board of Health. The purpose in view is to have health and educational authorities of the Southern States agree upon a plan of concerted action. Every person living in the South knows that the death and morbidity rates of the whites are not higher than in other sections. Records of small areas where accurate statistics are now gathered are proof. The rates among the negroes are high, and these, joined with those of the whites, make the total per cent. abnormally large. An erroneous impression of health conditions throughout the South is the result. Sickness among negroes is the consequence of ignorance. The majority do not observe the simplest rules of hygiene; they help to spread infection by prejudice against preventive measures and by the custom of promiscuous visiting of the sick. Housing conditions among them are bad; this, probably, is the greatest of all the problems involved. The remedy is threefold—to instruct the negroes in the primary principles of personal hygiene, to make better housing a civic responsibility and to enforce rigidly sanitary rules which relate to cleanliness, spread of contagion, etc.

The Boston Travel Society will conduct its language conversation tours in French, German and Italian during the coming summer. Dr. and Mrs. Charles F. Mills, of South Framingham, Mass., will be in charge of the French section. These tours are planned for a summer holiday. They cover the most attractive features of European travel. The greater portion of the time will be spent in either France, Germany or Italy, as the case may be, but the itineraries include enough additional territory to make well-rounded tours from a travel point of view. Local teachers will give expert native instruction in pronunciation and the amenities of social life. The main purpose is to learn to speak the language of the people. The French and German sections will sail from New York, June 25, on the single class steamship "Pennsylvania," and the Italian section, the same date on the steamship "Venezia," first cabin, New York to Naples. All will return on a single class ship of the American Line, sailing August 22 from Cherbourg to New York. The cost of the tour is based on minimum price steamship accommodations. More expensive berths can be secured by paying the difference as per rate sheets of the steamship companies. Railway service is second class. This is the usual choice of American travelers. In sight-seeing they use all the ordinary means of transit. The French and German tours of sixty-five days cost $375.00, including tuition; the Italian tour, with tuition, $395.00.

Fear that the opening of the Panama Canal may be followed by a world-wide redistribution of yellow fever and cholera, which will cause great commercial loss, was expressed recently by Dr. Richard P. Strong, head of the Harvard School of Tropical Medicine. Dr. Strong was formerly at the head of the government biological laboratory in the Philippines, and later became prominent through his work in combating the pneumonic plague in Manchuria. Last year he led the Harvard Medical School expedition to Peru, where an extensive study of tropical diseases was made. "The troubles to be feared from the spread of tropical diseases by traffic through the Panama Canal," he said, "are rather heavy financial losses through disturbance of trade than any great loss of life. Modern medicine has so far mastered the ways of checking infectious diseases that in many civilized countries no great mortality is to be feared from the introduction even of plague, yellow fever and cholera. For the United States and for Western Europe the greater peril is to trade, because medical control of the spread of tropical diseases rests, first of all, on the stoppage of traffic. One of the most interesting and not improbable changes in the distribution of tropical diseases is that the West coast of South America, particularly Guayaquil, may send yellow fever to India and receive Asiatic cholera by way of exchange. This would be done through infection by plague-bearing mosquitoes. Cholera might find a new means of access to the Western world. The disease always exists in certain reservoirs in India. The length of the voyage across the Pacific to Panama would give a fair chance to discover all actual cases of cholera in a ship, but cholera may be transmitted by persons without symptoms of the disease.

Dean E. P. Lyon, of the college of medicine at the University of Minnesota, submitted to the State Board of Health a plan agreed on for the proposed school of public health, which is to be made a new feature of the university curriculum next fall. For the present it will not involve any additions to the faculty, but will be built up by correlating the various courses now given in the university that are needed by public health officers. It is hoped eventually to make it a separate college. Under the plan, the school is to be under the college of medicine, but will be administered by a special subcommittee, consisting of the president of the university, the dean of the medical college, the instructor in charge of the division of public health, the head of the subdepartment of sanitary engineering, and the executive secretary of the State Board of Health. This committee will seek to consolidate into one course the facilities now existing at the university for training public health officials. It will prepare courses in the various colleges, such as can be used. The faculty of the school will consist of the officers and teachers of the medical college in the division of public health, those of the subdepartment of sanitary engineering and the teachers in other colleges whose courses are available for the purpose.

Laboring people of Houston, Texas, have contributed hundreds of dollars more for the fight against tuberculosis and for the relief of persons afflicted with the dreaded "white plague" than the wealthier people of the city, according to a recent statement made by Dr. Elva Wright at a meeting of the general committee that has in charge the arrangements for a performance and dance to be given by the Anti-Tuberculosis League, of Houston. This statement came from Dr. Wright during a discussion of the fact that union musicians would be employed for the performance. "We certainly should be friendly to the union people," said Dr. Wright. "The poorer people or the working classes have given of their time and money for the Anti-Tuberculosis League in far greater amount than have the persons who could better afford to do so. They seem to appreciate the reason for the fight the league is making, and, while they haven't much, they are willing to give some of what they have to aid us."

CHICAGO COMMENT.

The construction of hospital buildings in the United States has been extremely rapid, and the establishment of a journal entitled "Modern Hospitals" is furnishing a very close and rapid means of communication between those who furnish material, those who plan hospitals and those who build them. This may turn out to be an extremely valuable means of promoting that social development which removes from the residence all sicknesses, obstetrical and

surgical operations, and the diagnosis of defects and their correction by education in proper habits of life.

The wide establishment of tubercular hospitals must be looked upon as one of the greatest educational movements in modern times. It has been influential in changing the construction of houses and flats. The sleeping porch and the large sunny morning room have become popularized by the tubercular porch sleeper, and in a short time we may expect the vernacular architecture to represent this ideal in all new residences.

It is quite unfortunate that hospital ideals spread from the city onward into the country. The prime cost of land in the city is so enormous that it has modified hospital construction and has been followed by imitations in country places, where the value of land is a trifling consideration. The country physician who sees hospital management in a six or eight story hotel-like metropolitan hospital, returns to a distant town and takes with him the idea of a three or four story hospital at least. The ecclesiastical authorities that are engaged in hospital mongering from sentiment or tradition are apt to select the tall building for monumental reasons. The contributors are caught by an imposing architectural drawing and readily subscribe to a big, tall-steepled structure, when they would not be fascinated into giving by a spacious cottage hospital plan. Thus it has happened from Roswell, N. M., to Muskegon, Mich., that monumental, many-storied structures have been put up for hospital purposes, regardless of the utility of lawns, gardens and spacious grounds, and the desirable proximity of the bed to the open air porch.

When one thinks about it, it is easy enough to recognize the fact that the hospital has for its motive the cure of the patient. The cure should be safe, pleasant, quick, and we might say that it should be complete. Up to the present time the hospital has been designed to put the patient into a condition of convalescence. The hospital has sunk down to a hotel for human vivisection. It has been constructed for the convenience of the surgeon, the obstetrician and the physician, and for the glorification of the church and the munificent donor. The hospital ought to be a place for the cure of the patient, the study of the disease, and the education of the community in prevention. In the evolution of society it becomes an economic necessity. It is a sort of increased efficiency bureau. The sphere of the hospital should not be the accommodation of the physician and surgeon, or the delectation of the rich; it should be a place to which each and every member of the citizen body may resort, when injured, crippled or diseased, and an institution where he may be restored to a complete economic integrity and sent from the hospital back to his job carrying mortar, running an engine, or laying a sewer-pipe. It should be the safest place, the cheapest place and the most certain place in which to get well and to learn those necessary lessons in hygiene from housekeeping, cooking and exercising, to the most intricate matters of diabetic, albuminuric, or gouty diet that will prevent relapse. Such a hospital becomes at once an educational institution, inspired to bring about a condition in which the present-day hospital becomes as much out of place as the city livery stable is in the modern city.

The German accident and sick insurance has brought about a remarkable change in the motive and management of the German hospital. This is due to the fact that the insurance funds are managed by the representatives of the State, the representative of the employer, and the representative of the employe. The employe sees at once that the average weekly benefits are greater, the shorter the time that each individual beneficiary is laid up by accident or disease. When fractures occur, they generally unite inside of six weeks regardless of the external surroundings; but if treated at home or in the representative of the modern American hospital, the patient is unable to use the limb sufficiently to go on his job, before the end of three or four months, or even a year and a half. However, when treated by such a method as is employed in the Eppendorf Hospital, by massage, mechanical gymnastics, and occupational tests, even a fracture of the femur keeps a man from his job only eight or ten weeks, and he leaves the hospital to go to work upon his job the very next morning, in perfect physical condition. In other words, this hospital attempts to cure and make whole.

The industrial insurance which has only run a year in England, by which the laborer in every occupation is insured, has brought about a remarkable modification in the treatment of the sick, and Lloyd George's "research penny" has already begun to bear its fruits in the investigations and instructions which are going out from the central office.

It is high time that the American hospital should place over its door: "Leaving here you leave all ills behind."

The coalition of Rush Medical College with the University of Illinois seems to be no nearer of realization than a few weeks ago when last mentioned. However, various possibilities present themselves, and the great advisability of uniting the medical educational interests of the city into a sort of confederation to increase their efficiency and eliminate the financial competition which now exists, has begun to present itself to the most hidebound conservatives.

The chrysalis stage of the University of Chicago, which seems to have entered a chronic condition since the death of President Harper, gives little hope of progress in the direction of medical affairs. The Hull Laboratories are losing the most aggressive investigators. The whole institution is gradually eliminating the vigorous, the naive and the crude, and entering upon a pedagogic resting stage. The School of Education has dropped back into the methods and ideals of the early sixties, the Department of Sociology has become innocuous to capitalistic ideals. The medical research men are still alive, but are poisoned by the miasma of smug security. Enthusiasm, vigor, naivete are at a discount, and one loses caste by being animated, enthusiastic and alive to progress or what he may think is progress. The only outlet for enthusiasm is on the athletic field, and here the cheers and demonstrations remind one of the team work of the Turnverein.

Of course, the medical students are not easily assimilated in such a pedantic society, and it is doubtful if any medical school would feel at home on the University campus to-day. Folks are still sick; folks are unhappy and want to be happy, and folks are still folks, and look forward to a social and hygienic betterment. There is no class of students so close to the people and so close to the folks that make up a large part of the people as the medical students are. It is almost impossible to suppress the enthusiasm of medical students, as they become acquainted with the tremendous possibilities of life and the tremendous possibilities of bettering it, lengthening it and enriching it. Of course, medical students are often carried away by the glamor of economic success and the demonstration by ostentatious luxury of economic supremacy, but there still remain the great body of enthusiastic, hopeful, devoted men, who a century or half a century ago would have gone into the foreign or home missionary field, who are now eager to enter into research for the cure and prevention of disease—research for felicitating, for prolonging and enriching human life. These medical students are the patriots of the day, for they propose to encourage a citizen body out of which a democracy may be built, and in which a righteous, civil organization may be perpetuated. For such men, pessimistic pedantry is a cesspool of the most malignant miasma.

On the evening of May 6, at the rooms of the Northwestern University Law School, Dr. Harriet C. B. Alexander read before the Chicago Medical Society a paper on dementia precox, in which she confined herself entirely to classification and remarks relative to the proportion of different forms of this disease presenting themselves at institutions. She objected decidedly to the term dementia precox because the catatonic and paranoiac varieties showed little or no tendency to deterioration. The paper was remarkably erudite, but referred to absolutely no visible

findings or pathological lesions, and omitted entirely to consider any possibilities of etiology, except heredity.

Dr. Mary E. Pogue read a paper upon the general topic of the feebleminded. She looks upon all feeblemindedness as transmissible and inherited disease, and urges strongly all possible means of preventing procreation among the feebleminded, the insane and the epileptic, even sterilization. She also suggested that all possible means of preventing conception were legitimate in order to prevent the procreation of the unfit. Her statements were strong, and showed a fixed idea and a complete adaptability to the prevailing tendency among the professional alienists and the professional keepers of the feebleminded, the epileptic and the insane. We should suggest that the keepers of the crippled children, the blind and the deaf should come in and assist the alienists in accomplishing such legislation as would prevent the procreation of cripples.

It seems remarkable that those who have to do with the feebleminded, the epileptic and the insane should so interpret the law of Mendel as to presume that acquired defects are transmissible, and, therefore, inheritable. While there may be many arguments, and good ones, for euthanasia at least, until research has shown us what are the causes of the unknown conditions—feeblemindedness, epilepsy and insanity—there is certainly no rational biologist who could put forth any claim to the beneficial effect of castration or spaying for the prevention of the transmission of amputated legs or other post-natal defects, the result of either accident or disease.

Dr. Grace L. Meigs gave a splendid account of her experience with sudden death in infants with hypertrophied thymus glands. It was really delightful to descend from the mental mechanations of the two preceding alienists, to the simple, straightforward and rational materialism of this pathologist and common doctor. She showed an unusual familiarity with her subject, and gave very exact and interesting accounts of the cases which she had been fortunate or unfortunate enough to observe at the Children's Memorial Hospital. These cases were formerly looked upon as dispensations from God, and in much the same manner as Dr. Alexander and Dr. Pogue look upon their unfortunate.

We notice that "Sweet Marie" Gans, the I. W. W. agitator, who threatened to shoot John D. Rockefeller, Jr., on sight, was sentenced in New York on May 6 to sixty days at hard work in the workhouse on Blackwell's Island. We are reminded that this is the exact term of sentence given one of the nurse attendants of the Kankakee Hospital for actually killing an insane old man who had been in the institution only four days, and could not, therefore, be expected to conform to all the rules and regulations of the ward.

Assistant State's Attorney Case, of Cook County, who has investigated the nursing at the County Hospital under the Hoyne-Bartzen regime, has just decided to put in time clocks for the nurses to punch when they go on and off duty on the wards. There is a strange tendency of the county commissioners to spend anything for material in the market which can be bought; the only thing they are unwilling to pay for is service. The more clocks the public servants have to punch the less will they consider the importance of their other duties. These clocks are very efficient measures of time, but very poor measures of professional service.

Chester B. Duryea, who has been insane for some time, and recently shot his millionaire father, has now been taken in a straight jacket to Bellevue Hospital. He probably has had the services of a large number of alienists, who, like Dr. James B. Kiernan, of Chicago, consider the Wassermann reaction and the Abderhalden reaction equally inefficient in diagnosing syphilis, on the one hand, and dementia precox, on the other. The laboratory of the municipal court of Chicago promises soon to be able to make the diagnosis of dementia precox in persons accused of crime or misdemeanor and give its advice relative to the disposal of such young offenders.

Edgerton Y. Davis.

Ohio State Medical Meeting.

At the meeting held at Columbus this week, Cincinnati was chosen as the meeting place for 1915 without opposition. J. H. J. Upham, of Columbus, became president, and William E. Lower, of Cleveland, was elected president-elect. C. D. Selby, of Toledo, was re-elected secretary-treasurer. The following councillors were elected: Robert Carothers, Cincinnati, First District; T. Clarke Miller, Massillon, Sixth District; J. S. Rardin, Portsmouth, Ninth District. On the Committee on Public Policy and Legislation were elected: B. R. McClellan, Xenia; J. A. Thompson, Cincinnati and R. H. Bishop, Cleveland; B. R. McClellan is National Legislative Committeeman from Ohio. L. L. Bigelow, Columbus, was elected on the Publication Committee. The A. M. A. delegates are C. D. Selby, Toledo; J. A. Kimmel, Findlay, and J. C. Floyd, Steubenville; with J. L. Tuckerman, Cleveland, Sidney Lange, Cincinnati, and Geo. F. Zinninger, Kenton, alternates. The committee on Health and Education are E. M. Huston, Dayton; Eleanora Everhard, Dayton, and Louis Stricker, Cincinnati.

An effort to bring about medical and dental inspection of school children in villages and country districts will be made as a result of a meeting between delegates from the State Dental Society. At a well attended meeting Dr. P. B. Brockway, of Toledo, was elected president to organize this work. The following committee of five were appointed: Dr. P. B. Brockway, Toledo, School Medical Inspector; Dr. A. E. Peterson, Cleveland, School Medical Inspector; Dr. F. R. Chapman, Columbus, secretary Ohio State Dental Association; Dr. E. F. McCampbell, Columbus, secretary State Board of Health; Dr. W. H. Peters, Cincinnati, Chief Medical Inspector. This committee is to organize a State Society, recommend standard methods, cooperate with State Superintendent of Education by providing suitable course of lectures for prospective teachers attending normal schools, and carrying on an educational propaganda for the benefit of the laity.

Attention was given by the State administration to the complaints of Ohio physicians that the schedule of fees allowed by the State Industrial Commission in accidents covered by the workmen's compensation act is insufficient. To thresh out the differences a conference was held on Thursday afternoon. Governor James M. Cox and the members of the commission represented the State. The subject was gone over thoroughly, and the commission agreed to many demands made, while the physicians agreed to work for the present fees until their true valuation becomes patent.

The many social features were well arranged and largely attended. Governor Cox proved quite a drawing card at the cabaret at the Virginia Hotel on Tuesday evening. President Fackler's reception and ball was the social event of the meeting. The brilliant gowns worn by the attending women physicians, and the wives and daughters of the physicians, made this a memorable event.

The sections were well attended, while the orations in medicine and surgery, delivered by Drs. Robert Abbe, of New York, and David Edsall, of Boston, drew appreciative audiences.

CINCINNATI ITEMS.

Dr. S. P. Kramer will read a paper on "Surgery of the Cerebellum," Monday evening, May 11, at the Academy of Medicine.

Dr. Norval H. Pierce, professor of otology in the University of Illinois, Chicago, was the guest of Dr. Christian R. Holmes at luncheon, May 8, at the Queen City Club.

Drs. Frank Goldenberg, Halsted Scott, Douglass Johnston and Haviland Carr, all graduates of the College of Medicine, University of Cincinnati, have been appointed internes at the Jewish Hospital.

The United States Treasury Department, replying to a recent communication from the Academy of Medicine,

stated that investigations have been made and results will be published relative to the toxicity of meningitis serum. This announcement was made eight months ago by the Treasury Department. In the meantime, deaths such as that occurring recently in the practice of Dr. Frank Lamb are being reported.

The sixty-ninth annual commencement of the Eclectic Medical College will be held May 11 at Memorial Hall. A class of nineteen will be graduated.

The final lecture of the season was given by Dr. B. M. Ricketts at his experimental surgical research laboratory May 9. His subject was "Experiments on Lungs and Heart." Dr. Ricketts announced that thirty lectures had already been arranged for next season's work.

The Department of Health through its force of district physicians will make a survey of the school children. The general profession is earnestly requested to co-operate in this most praiseworthy undertaking. Special attention will be given to cases of chorea and epilepsy attending regular classes; scoliosis; tuberculosis of bones and joints; deformities due to disease or accident, as loss of eye, hand, arm, leg or foot, and paralysis or atrophy of muscle group. The intent is to make an early diagnosis and secure efficient treatment. This is one of the most effective plans for social service yet devised, and should have the hearty co-operation of every medical man in Cincinnati. Cases requiring treatment will be referred to the family physician where possible, and if too indigent will be referred to the clinics and hospitals.

The case of E. S. Hall, alias Holmes, under indictment in the Police Court for obtaining money under false pretenses was continued when called up on the calendar on May 6 to May 13. This is the man who represented himself with power to appoint district medical examiners, induced physicians to take out policies, then pocketed the premiums paid. He is a very shrewd, able and plausible talker, and conducted his own trial before Police Judge Bell. At least forty physicians and surgeons in and near Cincinnati have been victimized in sums ranging from five to sixty dollars, but only thirteen lodged complaint with the police. Drs. Angela B. Farley and Bertha Lietze, whom we mentioned last week in these columns, recognized the nefarious plans of Hall when he called on them, and apparently entered into the arrangement so as to secure evidence. They communicated with the police as soon as their canceled checks were returned, and have aided the prosecution by appearing as prosecuting witnesses. Dr. W. T. Nelson was victimized, and Dr. A. W. Nelson had no dealings with Hall.

SUMMER MEDICAL PREPARATORY SCHOOL, SCHOLARSHIPS AND NEW HOSPITAL INTERNES.

It is indeed most gratifying to note the new educational and practical activity in medicine in Cincinnati. The summer course to be instituted at the Medical Department of the University this year, with the addition of three new lecturers to the teaching force, is an evidence on the part of the department of a desire to excel in educational facilities, and will be of such material advantage to students that both from the teaching and the student standpoint the summer school is bound to be most popular and most valuable.

The establishment of ten scholarships, while a decided tribute to the generosity of Cincinnati, is of greater moment still, in that it will attract to he Universiy a class of men whose training and whose earnestness assumes not only that they will make good personally, but who are sure to reflect credit upon their Alma Mater. In fact, medical Cincinnati has seen no more auspicious year than this since Daniel Drake and his colleagues opened the Medical College of Ohio in 1820.

The nation-wide desire for interneships in the new hospital, the scholarships, the summer school and the opening of the best hospital in the United States, if not in the world, will mark a Commencement, indeed, that will make the ninety-fourth year of this medical school a most memorable one.

Summer Courses in Chemistry and Biology for Premedical and Other Students.

The recent advancement in the requirements for admission to medical colleges in this country makes it necessary for students to take courses in chemistry and biology in preparation for entrance to these colleges. Medical colleges in class "A Plus" of the American Medical Association now require, in addition to a complete four-year high school course, a two-year college course in chemistry, including organic chemistry, and a one-year course in biology or zoology. As some colleges have not yet established these courses, many students applying for admission have incomplete preparation in these subjects, and it becomes desirable to offer summer courses.

The University of Cincinnati will, therefore, offer courses this summer in analytical chemistry, in organic chemistry, and in biology. These courses will begin on June 8, and continue until August 15—a term of ten weeks. They will be open to all students whose credentials show that they have completed their high school course and also one year of general chemistry at college. Special students, not candidates for a degree, will also be admitted, provided they show satisfactory preparation for the courses to be taken. Credits in the pre-medical course will be given all students completing these courses in a satisfactory manner.

CHEMISTRY.

Two courses will be offered in this department as follows:

Analytical Chemistry.—A course in qualitative and quantitative analysis, including part of the work offered in courses 5a, 6, and 7, in the announcement. The course will consist of five lectures and five periods of laboratory work each week. It will illustrate the principles and practices of qualitative analysis, and include an introduction to gravimetric and volumetric analysis. Frequent conferences will be held, at which analytical methods and calculations will be discussed and the students' reports carefully examined. This course will be given by Dr. Harry Shipley Fry, associate professor of chemistry.

Organic Chemistry.—This course will consist of five lectures and three laboratory periods each week. The lectures will cover the chief classes of organic compounds, and will be arranged to meet the needs of those entering on the study of medicine or biology. This course is a prerequisite to the study of bio-chemistry. It will also be found useful to physicians desiring to continue their studies either in bio-chemistry or physiology. This course will be given by Professor Lauder W. Jones, professor of chemistry.

Professor Lauder W. Jones announces in addition to the above that a special course in bio-chemistry is being arranged for next fall. It will be necessary for the intending student to take the summer course in organic chemistry which will lead up to the more advanced work in bio-chemistry.

BIOLOGY.

The course in biology will consist of five lectures a week, followed by five laboratory periods. This course will correspond to the regular courses in the announcement, numbered 1a, 2a, 3b and 4b. The course will be specially adapted to the needs of students intending to study medicine. This course will be given by Mr. Raphael Isaacs, assistant in zoology.

Expenses.—Tuition in these summer courses will be free to residents of Cincinnati. Non-residents will pay a tuition fee of $25.00. The laboratory fee in chemistry will be $10.00. A breakage deposit of $10.00 will be required to cover breakage of apparatus. The balance remaining after deductions for breakage have been made will be returned. The laboratory fee in biology will be $7.50. There will be no other expenses connected with these courses. All persons desiring information about medical preparation as well as those interested in these courses, either students

preparing to enter a medical college, special students, or physicians, are invited to address The Secretary, University of Cincinnati, Cincinnati, Ohio.

Free Scholarships in the College of Medicine, University of Cincinnati.

Through the generosity of that public spirit that is now permeating Cincinnati, ten free scholarships in the College of Medicine have been announced. It is being recognized even by the laity that highly trained medical men are of the greatest economic and social advantage to the community, and this means has been adopted in a measure to aid in fitting men and women for a life work of efficient social service. The Committee on Admission, consisting of Drs. Knower, Freiberg and Jones, to whom was referred the conditions for awarding the free scholarships, reported as follows to Dean Holmes:

That we should immediately advertise and send copies of these conditions to the colleges of Ohio and the neighboring regions, and to applicants already on our lists.

1. Candidates should submit credentials as asked for in our admission requirements—

(a) To cover their high school work of four years with sixteen units.

(b) To cover the college work in chemistry, biology, physics and languages, as here required for admission (see catalogue).

2. Such candidates should also submit special recommendations signed by the scientific professors in chemistry and biology as to their good standing in scholarship.

3. Since it is essential to know positively that the candidate is worthy of this financial assistance and is actually in need of it, he should submit a statement to that effect from a physician in good standing, preferably one of the alumni of the Ohio-Miami Medical College. This should be accompanied by a similar statement from parent or guardian; and with references (names and addresses) of three reputable citizens.

4. Finally, we recommend that candidates should be informed that in order to retain these scholarships for successive years, he must maintain a good scholastic record with us, with no conditions or failures.

Examinations for Interneship in the Cincinnati General Hospital.

As a result of the efforts of the college secretary, Dr. Frank B. Cross, and Dr. Paul G. Woolley, chairman of the Examination Committee, seventy-three applications were received. These seventy-three applicants forwarded their examination papers from fifteen leading medical schools in Class A plus and Class A, and is a splendid tribute to the tremendous prestige of the Cincinnati General Hospiltal and the high esteem of medical educational facilities offered. These young men were urged to take the examinations by the deans and secretaries of their respective schools who conducted the examinations. Among the colleges represented may be mentioned Starling-Ohio, Columbus, Ohio; Syracuse, N. Y.; Northwestern Medical College, Chicago; University of Louisville; Western Reserve University, Cleveland, Ohio; Medico-Chirurgical College of Philadelphia; Harvard; University of Michigan, Ann Arbor, Mich.; Vanderbilt University, Nashville, Tenn.; Rush Medical College, Chicago; University of Buffalo, Buffalo, N. Y.; University of Indianapolis, Ind.; Tulane University, New Orleans, La.; Tufts University, Boston, and Jefferson Medical College, Philadelphia.

Among the competitors were seven from the University of Cincinnati, five of whom passed a brilliant examination. The successful aspirants were the following, named in the order of their ranking average: Thomas H. Kelly, Cincinnati; Max Shaweker, Northwestern University; P. R. Hawley, Cincinnati; Clay Crawford, Harvard; Miss Helena T. Ratterman, Cincinnati; Frank M. Coppock, Cincinnati; Milton Shaw, Michigan University; Merrick McCarty, Cincinnati; C. W. Schwartze, Rush College; W. A. Foertmeyer, Cincinnati; Carl Hjelle, Rush College; J. V. McGowan, Cincinnati; Charles Simon, University of Buffalo, and David Wolin, Jefferson College.

Dr. William H. Welch stated recently that Cincinnati presented the most auspicious opportunity for the development of a great clinical school. Apparently this appraisement has been taken at its true valuation, and medical graduates are eager to avail themselves of these wonderful opportunities. There can be no doubt that in future no difficulties wil be encountered to man the Cincinnati General Hospital with an efficient quota of interns.

A House Physician Wanted.

One house physician is needed for a period of six months beginning about May 16, 1914, at the Cincinnati General Hospital. The staff offers this position to any graduate in medicine. No professional examination will be required, but the candidates must make application in writing, giving name, age, place and date of graduation, previous hospital experience, if any, and two professional references. Applications should be made to the committee, Dr. Chas. E. Caldwell, 4 West Seventh Street, or Dr. Mark A. Brown, 628 Elm Street. This is an excellent opportunity to round out professional training from a smaller hospital.

Necrology.

D. C. Darnel, of Vernon, Texas, April 5.

J. B. Wurtz, sixty, of Philadelphia, Pa., April 3.

Ransom D. Melvin, fifty-two, of Parker, S. D., April 6.

Morris P. Boyle, thirty-eight, of Glenside, Pa., April 11.

William D. MacQuisten, fifty-two, of Detroit, Mich.,

R. C. McDonald, fifty-five, of Fremont, Neb. For two years he was president of the Nebraska Medical Association.

William R. Mandeville, sixty-two, of New Orleans, La., April 10.

April 6, at St. Mary's Hospital, of an acute attack of throat trouble.

John D. McCleary, eighty-four, of Indianola, Ia., April 4, for more than fifty-two years a practicing physician at Indianola.

G. W. Dodge, of Menasha, Wisconsin, April 6. The oldest physician in the Fox river valley, died suddenly of pneumonia. Dr. Dodge was a veteran of the Civil War and a thirty-third degree Mason.

F. H. Gilson, thirty-two, of Brackettville, Texas, April 4.

George Parker Willard, of Tiffin, Ohio. He was the oldest practitioner in Tiffin. He was a member of many of the prominent medical societies of the country, was a veteran of the Civil War, and a director in one of the local banks.

W. M. Horton, of Florence, Neb., April 5. City physician of Florence; was found dead in his automobile; he was on his way to call on a patient when he evidently felt the attack coming on, for he had drawn to one side of the road. Dr. Horton was a Civil War veteran.

J. Scott Todd, of Atlanta, Ga., was one of the most prominent physicians of the State. He was a member of the Fulton County Medical Society, the Georgia Medical Association and the American Medical Association. He was president of both the State and county associations several times and was highly esteemed by his associates. He was sixty-seven years old, and since his twenty-fifth year had practiced medicine in Atlanta. He was born in West Point, Ga. When a boy he attended the old Georgia Military academy at Marietta, which was destroyed by Sherman and was never rebuilt. When the war broke out, Dr. Todd, then sixteen years old, with others of his class, enlisted in the army and before the closing of his seventeenth year had sacrificed his right arm. He lost it in the fighting at Oconee bridge. After the war he went to Philadelphia to attend the Jefferson Medical college, and, following graduation there, returned to Atlanta when twenty-five years old to practice. For years he held a prominent place among the medical men of the city. He was connected with the Atlanta Medical college many years and at the time of his death was its emeritus professor of materia medica and therapeutics.

Contributed Articles.

ON THE RELATIONSHIP OF THE DUCTLESS GLANDS TO GROWTH.

BY ARTHUR D. DUNN, M.D.,
OMAHA, NEB.

Eugenics of late is becoming such a common topic of discussion, and the problem of evolving the superman is stalking so boldly into our drawing-rooms, that it seems not inapropos to discuss briefly certain glandular factors which influence growth.

Three things are requisite in all growth: First, the necessity for growth; second, food; third, the ability to grow. Growth is a necessity in all multicellular life. Every species has an optimum size which is best adapted for this species in the struggle to maintain itself in its environment; the tendency of all growth is towards this optimum. Individuals who do not approximate it tend to disappear, as, for example, the Australians and Tasmanians in the genus homo. Suitable food is admittedly necessary for all growth because growth is a manifestation of energy. It is not a form of energy, but the result of an energetic, and especially of a chemical situation (Friedenthal). An investigation of the third factor, namely, the ability to grow, leads us into a complexity of problems which are as yet largely unsolved. The protozoön is potentially immortal, dividing periodically and indefinitely into two new individuals. To be sure, at rare intervals the union of two cells occurs, which gives a new impetus to growth, and we find the sexual and asexual cycles, which are so well illustrated by the life history of the hematozoön of malaria. All higher forms require the union of cells from two parents to bring about the development of a new individual. The death of the parent individual follows in a longer or shorter period of time; therefore, the immortality of the metazoa resides in their offspring.

The exact physico-chemical factors determining the phenomena of growth are largely unknown. In mammals, the activities of certain groups of cells or glands seem to have much to do with the ability to grow. It is with the relationship to growth of this *interlocking glandular directorate, which also profoundly influences metabolism and sexual life,* that this paper has to do. We will consider merely the functions of the hypophysis, thyroid, thymus, and of the interstitial cells of the testicles and ovaries, as they effect the problem of growth. Other physico-chemical correlations are certainly at work, modifying and determining growth, but as yet our knowledge of them is so defective that such correlations may here be omitted.

The Hypophysis.—The relationship of the hypophysis to growth has of late been intensively studied. In 1886, Pierre Marie first directed attention to this hidden gland as having to do with acromegaly, although he not surprisingly attributed the disease to a destructive lesion. Observations have gone far to fix the cause of acromegaly in a hyperfunction of the pars anterior. The fact that destructive lesions are often found at autopsies after the condition has become stationary, does not disprove hyperactivity during the developmental stage. The operative cases of Hochenegg and Exner are experimental in their precision. Operative removal of the pars anterior in recent cases of acromegaly resulted in a regression of the anatomical manifestations. To-day gigantism is considered as a result of *hyperpituitarism.* In acromegaly the period of activity occurs after epiphyseal ossification is complete; in gigantism the hyperactive stage occurs in childhood or adolescence, before ossification is finished. As the terse phraseology of Launois and Roy has it: "Gigantism is the acromegaly of subjects with unossified epiphyseal cartilages, whatever their age may be." In giants, we find many of the osseous phenomena of acromegaly, such as prognathism, large sinuses, thick skulls, and enlarged and usually eroded sellæ. Giants and acromegalics show the same tendencies to lethargy, to slow cerebration, to physical weakness and exhaustion, and to sexual impotency. Other physico-chemical combinations of the pituitary are also disturbed, and the life phenomena of acromegalics and giants bear a striking resemblance to each other.

An interesting contrast to the above is revealed by the results of *hypopituitarism* effective during the growth period. Certain cases of infantilism are quite likely the result of pituitary deficiency. These are the "adults in small mould," the true microsomic dwarfs, the antitheses of the giants. I have had an infantile under observation whose sella turcica measured 7 x 9 mm. Her hands and features were delicately chiseled, and although a woman of thirty-two, the expression was girlish, and the body was that of a maiden passing into womanhood. Another form of hypopituitarism has attracted much attention since its description by Frohlich in 1902. It is characterized by *obesity, hypotrichosis* and *retarded development of* or *absence of the secondary sexual characteristics.* Fröhlich named this condition *distrophia adiposogenitalis.* Its counterpart with all the salient features have been produced experimentally in dogs by hypophysectomy (Cushing). Post-mortem observations quite definitely associate the condition with a destructive lesion of the hypophysis. A most interesting combination is the association of this pituitary defect with absence, or marked diminution, of the *stroma cells of the testicles and ovaries,* to which cells is attributed the somatogenic phase of the sexual impulse. Thus, in addition to modifying the growth of the individual, we find the hypophysis reaching out to prevent the reproduction of individuals in whom its functionings are abnormal. *Through its correlations with the testicles and ovaries, and possibly with other organs, it creates impotency and dulls sexual desire—a beautiful phylogenetic protective mechanism.*

Inasmuch as morality in the common mind has not yet been divorced from sexuality, the above relationship has an instructive corollary for the "moralists," to-wit, the conception of "morality" in some instances as a phase of disease. It should be unnecessary to state the converse.

The Thyroid—Cretinism.—The association of cretinism and thyroid disease has long been appreciated in regions in which goiter is endemic. It has been noted that wherever goiter is prevalent, cretinism is common. It is stated that there are 15,000 cretins in Switzerland alone. "The outcome of a host of researches has been the recognition of the enormous importance of the internal secretions of this gland, which is essential for the normal growth of the body in childhood and for the maintenance of the proper metabolism of the epidermic tissues and of the brain" (Osler). The thyroid early received much attention in the study of growth anomalies and its relationship to disturbance in growth is quite well known. This gland in cretins is found to be atrophic and its colloid thickened. In many instances the gland is fibrous. Goiter is present in 63 per cent. of cases (Vogt). The histo-pathology of the thyroid in these cases points to a hypofunction, resulting in a peculiar form of dwarfism, which varies markedly from the types associated with pituitary and thymic insufficiencies. The most striking feature of cretinism is a disturbance of growth, which affects the cutaneous and osseous systems. There is arrested or retarded bony development. The skull is small, the base is materially shortened (Virchow), the forehead is low, prognathism is marked, and the nose is rétroussé. The pelvis is often small and irregularly shaped. The stature averages from 1 to 1.5 m. The appearance is quite characteristic and the typical case is easily recognized by anyone who has studied photographs. The heavy, coarse-skinned face, the thick-lipped, drooling mouth, the imbecile expression, and the pudgy figure contribute to a picture which is easy of recognition. The hair is coarse and short. In males, the beard is thin or absent. *The secondary sex characteristics are not developed.* The pubic and axillary hair is absent, the penis and testicles are small. The uterus and ovaries and external genitalia are infantile, and in both sexes the organs are ill-fitted for procreation. The sexual instinct is absent or weak. Often there is little sign of maturity before the fifth or sixth decades.

We again see the race protected by a chemical correlation. The subjects of thyroid insufficiency are illy adapted to the struggle for existence, and are unable to contribute to race progress. They are retrogressive types. An *irresistible hidden force, stronger than human-made laws, takes the problem of their propagation out of our hands, and, by a finely adjusted physico-chemical interglandular correlation, renders them incapable of perpetuating their kind.*

The Thymus.—The thymus is probably the most important of all the ductless glands in its influence on growth, and at the same time its exact function is least well known. Its evolution and involution follows the growth cycle. Its average weight at birth is 13.26 gms.; from the first to the fifth year, 22.98 gms.; from the eleventh to the fifteenth year, 37.52 gms.; then its size gradually diminishes until the sixth and seventh decades, when its weight averages about 6 gms. It is the only gland in the body that attains its maximum size at the height of the growing period. It must *a priori* have to do with the function of growth. It is the most sensitive of all organs to the nutritional status of the individual and its volume so closely corresponds to general nutritional conditions that Sahli speaks of it as the "graduator (Gradmesser) of the state of nutrition." Experimentally, this gland has been proved to be associated with calcium metabolism. Basch found more calcium excreted by dogs in the first weeks after thymectomy than in normal animals. According to Klose and Vogt this phenomenon is the result of an acid intoxication. Basch believes the thymus to be closely associated with the thyroid in its functions. Removal of the thymus in dogs (herbivora are not well adapted for experimental work on account of early ossification) causes marked disturbance in ossification and growth. Three rather well-defined periods of varying length occur in thymectomized dogs: (1) Latency; (2) adiposity; (3) cachexia. The growth of the animals is retarded. They are sluggish, and bony changes similar to rickets appear. They walk on the whole foot. The hind legs are weak, and both extremities are deformed. The bones are osteoid and typical "rosaries" may be formed. There is enlargement of the epiphyses and the bones are soft and pliable. "The changes in the osseous systems permit of identification with rickets on a purely morphological basis" (Matti). It was not noted that ovulation or spermato-genesis was affected. There is hypertrophy of the hypophysis and of the thyroid, of the pancreas and of the chromaffin part of the adrenals after thymus extirpation. Post-mortem observations to determine the relationship of the thymus to rickets have not been made.

If perverted thymus function is the determining cause of rickets, and the recent experimental evidence points that way, we have another manifestation of a ductless gland exerting a profound influence on growth. Its intimate relations to the chromaffin system, to the other ductless glands, and to the sexual organ, although poorly understood, is manifested in the status thymico-lymphaticus. Sexual activity is not dulled in rachitic dwarfs to any great extent, as in cretinism or hypophysis disease, but pelvic deformity puts a check to perpetuation of this type of physically undesirables. It is interesting to note how much more certain and relentless is the check to reproduction by *interglandular correlations* when both defective cerebral and physical development is concerned.

Achondroplasia, Chondrodystrophia Fetalis.—Achondroplasia is in direct contrast in its pathogenesis to rickets. In the former, there is a decided defect in epiphyseal cartilaginous formation; in the latter an excess. Achondroplasia has been attributed to disturbed thymic function, but this is unlikely in view of the probable bearing of the thymus on the etiology of rickets. The changes occurring in the line of ossification in the cretinic and achondroplasic dwarfs are similar, but differ in the fact that in the former the line of ossification remains open indefinitely; in the latter, it closes early, which results in an approximately normal trunk and short, "flapper" extremi-

ties. In the former, the genitals are atrophic; in the latter, they are normal. The chondrodystrophic is capable of procreation, although difficulties arise from pelvic deformities in the female. It is with this type that Marie de Medici and Natalie of Russia failed in their efforts to breed a race of dwarfs. The glandular determinants, if any, in achondroplasia are not understood.

The Interstitial Cells (Leydig).—Any discussion, however fragmentary of the correlative functions of the ductless glands in growth, is essentially lacking should we fail to consider the stroma cells of the testicles and ovaries. The profound effect of castration on the development of mammals is common knowledge. The disproportionately long extremities, the redundancy of fat, the feminine voice in the adult man, the bearded woman, and the numerous abnormal psychic manifestations of castrates are well known. Johannes Brahms said he could nearly always distinguish a masculine woman from a feminine man by their playing, although he admitted at times it was most difficult.

The interstitial cells of the testicle were first described in 1850 by Franz Leydig; until 1900, they were considered merely as nutritive cells, whose function was to supply food stuffs, especially fat, to the maturing spermatozoa. Regaud, Policard and Loisel first regarded them as forming an *interstitial gland with an internal secretion.* Much experimental and clinical evidence has accumulated to support this view.

Roentgenization destroys the germinal cells and leaves the interstitial. *Potentia generandi* disappears, *potentia coeundi* remains normal. Growth and secondary sex manifestations and characteristics are not affected. Sterilization of women, without the unpleasant symptoms which follow castration, has recently been accomplished on therapeutic grounds by Roentgenization.

In *cryptorchids* spermatogenesis does not take place, although the development and sex characteristics are normal.

Vasectomy destroys the tubules, the stroma remains intact.

Steinach has shown in his ovarian and testicular transplants that he can at will change the sex characteristics, with the corresponding growth phenomena, in guinea pigs and rabbits. Microscopic examination of the transplants shows that the germinal cells have disappeared and the interstitial cells remain.

The maximum amount of stroma is observed in animals at the breeding season. Tandler observed that in moles in December almost no stroma was present, while in June it constituted the major part of the testicle.

It is evident from the above that the way the germinal glands influence growth and metabolism is by the powerful influence which their hormones exert on the soma. As Tandler so well puts it: "The hormonic collaboration of these organs (germ glands, thyroid, thymus and hypophysis) times the normal entering into maturity of the individual. This is characterized by the completion of growth, the establishment of sexual potency and the appearance of the secondary sexual characteristics."

Our purpose in this paper has been to give a rough illustrative sketch of the hormonic correlations of certain ductless glands as manifested in growth phenomena. We are often seeing in practice abnormally developing children and abnormally developed adults who come to us for explanation and help. Of help there is some, of explanation there should be much forthcoming. Study of the problems of growth is sure to bring much of economic, social and therapeutic value to society.

LATENT MASTOIDITIS.*

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We may speak of a mastoiditis becoming latent, when an inflammation of the mastoid cells persists after apparent termination of the acute inflammation of the middle ear. Otoscopic examination may reveal an intact tympanic membrane, which has not returned to its normal color; there may or may not be a mild degree of deafness; the long process of the malleus may be ill-defined, or there may be, what is still more important, a hyperemia or slight bulging at the upper posterior quadrant of the tympanic membrane. In other cases, the tympanic membrane may be absolutely normal in appearance, and it is quite an easy matter for us to overlook a latent mastoid inflammation if we forget that a negative finding of the tympanic membrane has no significance as far as the condition of the mastoid cells is concerned. A case has come under my observation in which the tympanic membrane was of normal appearance, but, notwithstanding this fact, an extradural abscess was uncovered at the time of operation.

It is the consensus of opinion to-day that all cases of acute middle ear suppuration are complicated by an inflammation of the mastoid cells. In favorable cases the mucous membrane alone is involved and absorption of the pus from the mastoid cavity slowly takes place before or after the middle ear has healed; at other times an osteitis of the mastoid develops, and healing if it does take place occurs very slowly. It may be questionable if a true osteitis of the mastoid cells ever heals completely without operative intervention. Certain we are that the morbid process may be latent for a long time, for Newman and Ruttin have reported cases in which the symptoms demanded operation two months to eight years after the ear had ceased discharging, and in which the tympanic membrane appeared normal. We have no right to assume that cessation of discharge from the ear is a positive evidence of complete recovery of the mastoid disease; on the contrary, we must bear in mind that a dormant process may be hidden in the cells for some time, and may, after an acute coryza, become

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active again and manifest itself with symptoms of an intracranial complication. It, therefore, behooves us in all painful conditions of the ear to examine the mastoid process carefully in order that we may gain some information regarding the conditions of its cells.

The indications for the mastoid operation vary with different operators. There are some aurists who are very conservative; others are perhops too radical and are ready to operate on most cases of acute middle ear suppuration which have been discharging longer than eight days. It is not an easy task to strike a happy medium, for many cases present symptoms of such a vague character that even the most experienced aurist finds it difficult to decide whether an operation is indicated. It is advisable in all doubtful cases to give the patient the benefit of the doubt, and to operate ten times too early than once too late. This fact was impressed upon me some years ago.

A woman, forty-five years of age, had an acute purulent otitis media with no positive signs of a mastoid involvement. Four weeks after incision of the tympanic membrane the discharge, which had been very profuse, ceased. There was no fever, no infiltration of the soft tissues surrounding the mastoid, no pain on pressure, no sagging of the upper posterior wall, and within ten days after the cessation of discharge, the ear drum had returned to its normal appearance. About this time the patient complained of pain located chiefly in the parietal and frontal regions of the side of the affected ear. The pain was aggravated at night. It was also noted that the general health of the patient was not as good as it had been, that she was losing weight, complained of feeling tired after slight exertion and had lost her appetite. The presence of a normal looking tympanic membrane, the absence of fever, and, furthermore, the complete absence of pain on pressure, made me hesitate in advising a mastoid operation. A few days later she passed from under my observation, returning to her home in the country. At the time of her departure she was still suffering with severe headaches. A month later symptoms of meningitis appeared and a mastoid operation was performed by an aurist in a distant city. By this time a diffuse leptomeningitis had developed and the patient died two days after operation. There is no question in my mind that the life of this patient could have been saved if the mastoid operation had been performed at a time when the headache first manifested itself.

Since seeing this case of latent mastoiditis three other cases have come under observation. It will not be necessary to cite in full the history of these cases; it will probably suffice if we consider in a cursory way some of the important symptoms. The tympanic membrane was of a normal appearance in all but one case. In the latter instance there was a mild exudative catarrh of the middle ear, which disappeared in two weeks after repeated catheterization. Four weeks later the tympanic membrane became congested and a slight bulging occurred at the upper posterior quadrant. Deafness was present in two cases but was of a mild degree (six feet wh. V. low tones). Infiltration of the soft tissues surrounding the mastoid process occurred in one patient, but did not make its appearance until two months after the middle ear suppuration had ceased. The middle ear discharged in one case two weeks, in another two days, and in the third five days. Abducens paralysis was present once and came on two weeks after the ear ceased discharging. The operative findings were nothing unusual except that it was noticed that the cells in the region of the antrum were apparently healing spontaneously, whereas those at the tip and posterior to the antrum contained pus. In one patient, after removing the diseased post-antral cells a large extradural abscess was uncovered. All of the mastoid bones were of the diploetic variety with the exception of the tip cells which were of large size. The recovery of these patients was uneventful, complete healing taking place in three to four weeks, and the abducens paralysis which was present in one case disappeared six weeks after operation.

What are the influences which favor the development of a latent mastoiditis? If we consider the question first from an anatomical standpoint, it is not difficult for us to see that the anatomical structure of the temporal bone could easily be a causal factor in the development of a latent process. In the large pneumatic-celled mastoid the micro-organisms find a fertile soil for their development, for in this type of bone the alveoli are clothed with a very fine layer of epithelium which offers little resistance to the spread of the disease. If the infection is severe the cell walls break down early in the disease and positive manifestations of a mastoiditis develop long before the middle ear has an opportunity to heal. We may therefore state that if an infection takes place in a mastoid of the pneumatic-celled variety that there is a better opportunity for the disease to present objective and subjective symptoms and furthermore a possibility that operative intervention will take place much earlier. In consequence there is less danger to the life of the patient. The presence also of a thin cortex in the pneumatic mastoid favors the early development of a periostitis.

If on the other hand the diploetic type of mastoid is involved a greater resistance is offered to the progress of the disease. The small alveoli besides being invested with a thin epithelium also contain a connective tissue layer in the interstices of which are present large numbers of leucocytes. The latter offer a certain amount of protective influence which may limit the spread of the infection for the time being and may have a tendency to establish a latent character of the disease. It is readily seen that with the thick cortex which is usually present in this type of mastoid, that there could be nothing more dangerous to the life of the patient than to have a latent process develop in the deep cells. Therefore we may term a dangerous mastoid one with diploetic cells and especially the right mastoid in a patient with a brachycephalic head. In these skulls on account of a forward displacement of the lateral sinus there is great danger of the development of a thrombus. If the latent osteitis heals spontaneously a sclerosis develops and in consequence the temporal

bone becomes of a still more dangerous type should the patient at any time have a recurrence of a middle ear suppuration. The disease may then run a painless course and go unrecognized until other symptoms of a graver character supervene.

Another important anatomical factor in the development of latent mastoiditis is the size of the antrum. If an antrum is small and there is much swelling of the mucous membrane, this cavity may become entirely shut off from the remaining mastoid cells. As a result of this obliteration, there is a retention of pus in the cells, the middle ear may heal spontaneously, but the infection continues in the mastoid. When an antrum is large and the aditus of small caliber it is easy for the outlet to become partially or completely obstructed and for the antrum to be shut off without means of proper exit. To a certain extent this undoubtedly takes place in most cases of mastoiditis. The presence of a wide Eustachian tube in young children is another important point in the causation of a latent mastoiditis. On account of the thickness of the tympanic membrane in children, rupture may not take place, the pus finds exit through the Eustachian tube, and, in some instances produces a secondary broncho-pneumonia. Cases have been reported where death took place apparently from a broncho-pneumonia, but at autopsy it was found that the children died from a localized edema of the brain, the result of a mastoiditis which had not been recognized. So much for the anatomical conditions which favor the development of latent mastoiditis.

We shall next briefly consider another predisposing cause, namely, the virulence of the bacteria. It has been shown that the relative virulency of the bacteria is as follows:

1. Streptococcus mucosus capsulatus.
2. Streptococcus pyogenes.
3. Pneumococcus.
4. Staphylococcus.

We must be on our guard when we are dealing with a streptococcus mucosus infection especially if the discharge from the ear lasts but a few days. The course of this infection is insidious, readily assumes a latent character and on account of its extreme virulency predisposes to intracranial complications.

Lastly we may mention the condition of the patient's health as a causal factor. A patient whose general health has been impaired for some time and who develops mastoiditis has less chance for spontaneous recovery than one who is in good physical condition. In these ill-nourished patients a chronic middle ear suppuration usually results, but should the middle ear heal, then there is a possibility that the low vitality of the patient will prevent complete absorption of the pus from the mastoid cells.

Symptoms.—From what has been said in the foregoing it may be inferred that the symptoms of a latent mastoid inflammation are of a vague character. It may be more to the purpose in describing the symptoms to divide them into subjective and objective symptoms.

Subjective Symptoms.—We may be suspicious of a latent mastoiditis when the general health of the patient does not improve after the discharge from the middle ear has ceased, when there is present a little fever, malaise, anorexia, and a feeling of heaviness in the head with occasional pains in the parietal or occipital regions. It is absolutely necessary to exhaust all means of making a diagnosis if the patient complains of constant headache after cessation of discharge from the middle ear, and if we are at all doubtful it would be infinitely better to do an exploratory operation, rather than to wait for further evidence of a mastoiditis.

Objective Signs.—Not much information is obtained in this disease from the examination of the tympanic membrane. The latter may be absolutely normal in appearance. In some cases a small quantity of exudate or pus may be present on the floor of the middle ear. If this is the case and we suspect a latent mastoiditis it is advisable to incise the tympanic membrane, and try to force the exudate from the middle ear by inflating the Eustachian tube. If a bacteriological examination of the fluid reveals the presence of the streptococcus mucosus a mastoid operation should soon follow. At other times the tympanic membrane is congested at its upper posterior quadrant and shows a tendency towards slight bulging. It must always be remembered that a mastoid process may be filled with pus and still show an absolutely normal tympanic membrane.

We may often gain some knowledge of the condition of the mastoid cells by palpation, but this procedure as ordinarily practiced is not to be recommended. Superficial pressure of the mastoid process over the region of the antrum and at the tip may produce pain, but this pain may not be the result of an inflammation of the mastoid cells. The small lymph glands which lie over the mastoid process may be inflamed not only as a result of an ear disease, but also from some nose or pharyngeal infection and superficial pressure over these inflamed glands produces severe pain which may be mistaken for a bone disease. It is infinitely better in palpating the mastoid process to make deep pressure with the thumb in the region of the digastric fossa, for I have often observed that superficial pressure elicits no pain, whereas deep pressure over the digastric fossa produces intense pain. We would therefore have to be suspicious of a latent mastoiditis in a patient with the history of a former discharging ear and pain on deep pressure over the digastric fossa. A blood examination is at times a valuable adjunct in arriving at some conclusion regarding the presence or not of pus in the mastoid cells.

At this point we must not fail to mention a condition which produces severe pain at the tip of the mastoid process. I refer to a myalgia of the sternocleido mastoid which is more often present than realized. The pain from a myalgia of the sternocleido-mastoid very often radiates to the frontal region, and a mistake in diagnosis could easily be made should there happen to be present at the same time a frontal sinusitis. Patients with frontal sinus disease have been operated upon without relief of the

headache. The pain in the frontal region in these patients was not the result of a frontal sinus disease, but was a reflex pain from a myalgia of the muscles of the neck. It has also been observed that after a mastoid operation the myalgia disappears for a few months returning again as soon as the fibres at the tip of the mastoid have become firmly attached and the hypertonic condition of the muscles has again become established.

There is another point in the palpation of the mastoid process which I shall briefly mention. If we palpate both tips of the mastoid at the same time we will readily feel the difference in the size of the tip on the healthy side as compared with the one on the diseased side. When the tip cells are involved there is usually a mild periostitis at this point with infiltration of the soft parts, and as a result the sharp outlin of the tip is lost. In fact, one is often able in this way to ascertain which is the diseased mastoid without a previous examination of the ears. At times a small lymph gland becomes enlarge below the tip. This must not be mistaken for the tip itself. With the presence of any of the objective symptoms we must be especially careful to keep our patient under observation and to make use of another means of diagnosis which often gives us valuable information, namely, the skiagram.

A skiagram should be made in all suspected latent mastoid inflammation as well as in those cases in which there is a discharging ear, but in which there is no positive indication for operation. In fact, in all cases of mastoid inflammation whether acute or chronic, it gives much evidence regarding the extent of the disease, the type of cells present, the position of the lateral sinus and the height of the middle fossa. When the skiagram shows distinct cell walls we may be certain that very little if any inflammation is present, when the cell walls are somewhat blurred a mild inflammation may be suspected, whereas absence of cell walls and a distinct opacity means that the cells are filled with granulations or pus or that the bone is sclerosed. A distinct opacity especially in the cells surrounding the antrum would be an indication for operation provided other signs or symptoms of a latent mastoiditis existed. If the skiagram shows an opacity throughout the mastoid process it is advisable if other symptoms of an indefinite character are present to perform an immediate operation. Such an opacity means either sclerosis or pus, and in either case there is great danger in waiting. We have seen two cases in which the skiagram showed a localized opacity behind the antrum, and at the time of operation an extradural abscess was found in this region. On the whole the skiagram may be considered as an exceedingly good adjunct in the diagnosis of a mastoiditis.

Summing up the various signs and symptoms referred to in the foregoing, I would suggest the following indications for operation in a latent mastoiditis:

1. Pain on pressure over the mastoid with a history of a former discharging ear, with a normal tympanic membrane and a positive X-ray plate.
2. Painful mastoid with history of former discharging ear, the tympanic membrane showing hyperemia or slight bulging of the upper posterior quadrant with positive X-ray plate.
3. The presence of the streptococcus mucosus in the exudate of the middle ear with or without pain on pressure over the mastoid.
4. Intracranial complications having their probable origin from the mastoid cavity.

MATERNAL OBSTETRICAL RECORDS IN THE CINCINNATI HOSPITAL FOR A PERIOD OF TWENTY YEARS.*

BY MAGNUS A. TATE, F.A.C.S.,
CINCINNATI.

The Cincinnati Hospital is so divided that one ward with a delivery room is given over to obstetrical cases and another ward to operative obstetrical cases and gynecology.

During the past twenty years, from January, 1894, to and through December, 1913, there were 6,305 obstetrical cases admitted; of this number 4,711 were discharged as well, 445 as improved, 397 as unchanged (that is, the same condition as on admission), and 115 died.

When it is considered that most of the patients admitted came from the poorest of homes, and many of them brought in in a serious condition, often having been in labor many hours in unsanitary surroundings, the hospital has the right to be proud of its obstetrical record, for, by comparison, it holds its own with our best hospitals.

The following tabulated statistics were taken from case reports, and to the hospital librarian I extend my sincere thanks for his very valuable and painstaking assistance.

Hospital records and statistics are valuable, in so far that not only are they of interest, but they tell us what has been done, the kind of cases cared for, the results obtained, and, by comparison, what is expected of the trained physician of to-day. These statistics I give you are not complete, but are the best obtainable.

As Cincinnati increases in population, so will the services of the various hospitals grow, and now that we are soon to enter the new institution with its many modern improvements, so should our records improve and suffering mankind be benefited. That disastrous bugbear to obstetrics, namely, sepsis, is slowly and surely being conquered by better understanding upon the part of physician and laity, and the day is almost at hand when it will be considered a rarity.

Cincinnati is awakening to a new era, our people are realizing as never before that midwives are not a necessity to their welfare, and the sooner they pass out of existence, the sooner the change will be noted in our obstetric mortality.

The young physician, when confronted with a difficult obstetrical case, will immediately call for assistance or send patient to some hospital, but the midwife,

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on account of her lack of training, does not realize the condition of patient and plays the hazardous game of waiting, with its evil consequences.

The physician, when called to a case of labor, which in his judgment should be transferred to the City Hospital, should have the privilege of going with the patient and seeing the hospital physician deliver or operate case. This is only just; it will be of interest and often of assistance to outside physicians.

Medical students should never miss the opportunity of witnessing obstetrical cases at the City Hospital, as the knowledge they thus gain is very valuable, and this they will surely realize to the full extent when they enter the practice of medicine. The more cases witnessed, the more confidence, greater knowledge, and consequently the better fitted one is to practice midwifery.

Among the 6,305 cases admitted, nearly every nationality is represented, but our negro population forms a goodly number of the cases.

This gives our social settlement workers a most excellent opportunity to do good work in following up cases, to see that the woman's home is made presentable and clean, that she has proper food and clothing, and that the baby is nourished properly and started on the road to health, and not to that of rickets and tuberculosis. Above all to try and teach women to keep from the use of alcohol.

All deliveries are carried on with the strictest cleanliness possible. Vaginal examinations are made as often as necessary but no oftener. Indiscriminate vaginal examinations have been done away with. Anesthesia is used as required. Rubber gloves are always worn by the accoucheur and assistants. Intra-uterine douches are not given unless absolutely indicated. Curetting is becoming less and less a requirement, as our better understanding of the pathology of pregnancy is driven home. When students are taught to use the curette with the greatest of discrimination rather than indiscriminately, we will note a further lowering of the death rate. I have long come to the conclusion that the use of the curette in obstetrical cases has done more harm than good. To keep hands and instruments out of a parturient uterus and give nature a chance to show what she can accomplish is a most excellent rule to remember.

By studying the following table, you see the number of cases admitted each year, those discharged, the number that left as well, as improved and unchanged, and also the number that died.

The time allotted for the reading of this paper will only allow me to mention in detail the various divisions with a few remarks.

The following tables shows the number of cases admitted each year and the results. The smallest number, 180 cases, admitted in 1901; while the greatest number, 532, admitted in 1910. Up to and through 1905, the greatest number admitted was 290, since which time the smallest number was in 1907, namely, 310 cases.

	Total.	Discharged.			
		Well.	Improved.	Unchanged.	Died.
1894	236	185	10	21	4
1895	236	197	10	20	1
1896	267	207	13	22	4
1897	224	187	10	9	3
1898	228	174	13	7	5
1899	260	206	17	10	5
1900	200	159	9	13	3
1901	180	134	14	8	4
1902	235	168	22	18	3
1903	244	184	18	16	4
1904	290	209	21	16	7
1905	283	203	19	21	5
1906	340	254	26	12	7
1907	310	216	33	20	6
1908	410	272	49	27	8
1909	474	369	18	34	8
1910	532	418	20	27	10
1911	411	305	24	28	8
1912	488	348	52	33	10
1913	457	316	47	35	10
Total	6305	4711	445	397	115

Abortion: There were 1,124 abortions admitted grouping all abortions as one heading—834 were classified as uncomplicated and 62 were complicated by other diseases, sepsis heading the list. Of the 834 uncomplicated cases there was no mortality; of the 64 complicated, 22 died as follows: Pyemia, 1; sepsis, 11; sapremia, 3; septic peritonitis, 2; septic metritis, 1; phthisis pulmonalis, 1; peritonitis, 2; retained placenta and sepsis, 1. There were 148 cases of threatened abortion—no mortality; 1 case complicated by lobar pneumonia and 1 by placenta prævia.

Inevitable abortion: Seven cases—one of the cases complicated by a pelvic abscess.

Incomplete abortions: Sixty cases. Complications recorded: Sepsis, 1; lobar pneumonia, 1; uremia, 1; pelvic abscess, 1; pelvic peritonitis, 1; pelvic lymphangitis, 1. The case complicated by lobar pneumonia died.

Abortion attempted while in house: Two cases.

Convalescent abortion cases: Seventeen. That is, cases where everything had been expelled from uterus and they came into hospital to rest up until they were well.

Under the heading of abortion I also group the three following cases: One hydatid mole; 1 flesh mole, and 1 case of twin abortion with hydrops amnii.

This gives us a mortality rate in the 1,124 cases admitted—23 cases dying—a trifle over 2 per cent. We have no way of knowing how many of these cases were criminal, nor how many had to have a subsequent operation for some inflammatory disease of tubes or ovaries.

We are able to give from these deductions the relative frequency of abortions to pregnancies. There were 834 simple abortions to 3,522 normal cases of labor—that is, one abortion to 4.2 of pregnancies.

Ectopic gestation: It will seem out of proportion to report only 30 cases of ectopic pregnancy in this service, but strange to relate most of the cases in recent years have been referred to the Gynecological Department. Of the 30 cases reported the interesting complications were as follows:

	Total.	Discharged			
		Well.	Improved.	Unchanged.	Died.
Abortion	834	662	162	10	....
With malaria	1	1	....	....	....
With typhoid fever	2	2	....	....	....
With pyemia	1	....	....	....	1
With sepsis	20	5	4	....	11
With sapremia	4	1	....	....	3
With septic peritonitis	2	....	....	....	2
With septic metritis and peritonitis	1	....	....	....	1
With septic endometritis	1	1	....	....	....
With puerperal mania	1	1	....	....	....
With hemorrhage	8	4	4	....	....
With phthisis pulmonalis	1	....	....	....	1
With jaundice and secondary syphilis	1	1	....	....	....
With abscess liver	1	....	....	1	....
With peritonitis	3	1	....	....	2
With salpingitis	1	....	1	....	....
With endocervicitis	1	1	....	....	....
With pelvic peritonitis	1	....	1	....	....
With perineal abscess	1	....	1	....	....
With placenta prævia	1	1	....	....	....
With retained placenta and sepsis	1	....	....	....	1
Abortion threatened	146	85	52	9	....
With lobar pneumonia	1	1	....	....	....
With placenta prævia	1	1	....	....	....
Abortion inevitable	6	6	....	....	....
With pelvic abscess	1	1	....	....	....
Abortion incomplete	54	41	10	3	....
With sepsis	1	....	....	....	1
With lobar pneumonia	1	1	....	....	....
With uremia	1	1	....	....	....
With pelvic abscess	1	....	1	....	....
With pelvic peritonitis	1	....	1	....	....
With pelvic lymphangitis	1	1	....	....	....
Abortion attempted	2	1	1	....	....
Abortion, convalescence from	17	16	1	....	....
Hydrops amnii twin abortion	1	1	....	....	....
Hydatid mole	1	1	....	....	....
Flesh mole coloptosis	1	1	....	....	....
Ectopic gestation	18	5	11	2	....
With pregnant uterus	1	1	....	....	....
With fibroid	2	1	....	....	1
Ruptured	1	1	....	....	....
With ruptured perineum	1	....	1	....	....
With pyosalpinx	1	....	1	....	....
Extra-uterine pregnancy	3	....	1	1	1
Tubal	1	....	1	....	....
Tubal with typhoid and chronic endometritis	1	1	....	....	....
Tubo-ovarian	1	....	....	1	....

One with pregnancy, that is, combined intra and extra uterine.

Two with a fibroid of uterus.

One with a ruptured pregnant uterus.

Two cases of this number (30) died, giving us a mortality of 6 2-3 per cent. The causes of death were: One complicated with a fibroid and one from an excessive hemorrhage, probably sepsis playing an important role.

Pregnancy: Under this heading is grouped 359 cases that entered the hospital and were undelivered. Three hundred and thirty-four left the hospital before time of delivery, condition unchanged.

Nine of these 359 cases turned out to be cases of spurious pregnancy; 11 cases had persistent vomiting, and of this number two died; one of the cases of vomiting being further complicated by acute nephritis. This is especially interesting to note because there are

	Total.	Discharged.			
		Well.	Improved.	Unchanged.	Died.
Pregnancy	332	....	....	331	1
With eclampsia	1	....	....	....	1
With placenta prævia	1	....	....	....	1
With fibroid tumor	1	....	....	....	1
With retroflexion	1	....	1	....	....
Toxemia of	1	....	1	....	....
Hysterical	1	....	....	1	....
Pseudo	9	2	6	1	....
Vomiting of	10	4	4	1	1
Vomiting of with acute nephritis.	1	....	....	....	1
Recurrent hemorrhage	1	1	....	....	....

some who state that cases do not die of vomiting of pregnancy. Experience with such a case is surely a convincing teacher. Of these 359, the following cases died: One eclampsia, one placenta prævia, and one with a fibroid, one cause not given.

Another interesting group of cases were brought into the hospital after being delivered outside, numbering 529 cases. Many of them were most desperate, as can be seen by studying the table. Forty-eight cases died, and again sepsis played the heavy rôle,

	Total.	Discharged.			
		Well.	Improved.	Unchanged.	Died.
Retained placenta	22	17	5	....	....
With septic peritonitis	1	....	....	....	1
Ulceration perineum	1	....	1	....	....
Puerperal eclampsia	13	3	4	1	5
With peritonitis	2	....	....	....	2
With septic peritonitis	1	....	....	....	1
With broncho-pneumonia	1	....	....	....	1
With ruptured uterus	1	....	....	....	1
Post-partum hemorrhage	2	1	1	....	....
Asthenia post protracted and obstructed labor	1	....	....	....	1
Adherent placenta	10	7	....	....	3
Placenta prævia	8	5	3	....	....
With sepsis	1	....	....	....	1
Puerperal sepsis	60	24	11	2	23
With influenza	1	1	....	....	....
With myocarditis	1	....	....	....	1
With general peritonitis	1	....	....	....	1
With peri-vaginal abscess	2	1	1	....	....
Chronic	1	1	....	....	....
Convalescence from	106	92	12	2	....
Puerperal sapremia	5	2	1	....	2
Peritonitis	4	1	....	....	3
Insanity	7	2	3	2	....
Dementia	1	1	....	....	....
Dementia with pelvic peritonitis.	1	....	....	....	1
Mania	8	1	2	5	....
Sapremia	2	2	....	....	....
Inflammation breast	28	20	8	....	....
Abscess breast	57	35	20	2	....
With insanity of lactation	1	....	....	1	....
Phlegmasia dolens	6	2	4	....	....
Laceration uterus	5	4	1	....	....
Cervix	77	42	30	5	....
Cervix with endometritis	1	....	....	1	....
Cervix and perineum	11	6	3	2	....
Cervix and perineum with congestion of lungs	1	....	....	....	1
Perineum	78	40	26	12	....

carrying away 31 of this number. Eighteen cases were brought in with post-eclamptic seizures with septic complications and one with rupture of uterus, 11 of this number dying.

Nine cases of history of placenta prævia, one complicated by sepsis died, eight recovering.

There were 8 cases of mania, 2 dementia, 7 insanity, only one of this number dying, a case complicated by peritonitis.

There were only 2 cases of post-partum hemorrhage reported. Seventy-nine women were septic when brought in. Twenty-three cases reported of retained placenta, one dying from peritonitis. Ten cases of adherent placenta, and of this number 3 died.

There were an unusually large number of breast cases, 28 being inflamed and 58 abscessed; one of these abscess cases was complicated by insanity of lactation.

One hundred and seventy-three cases were torn (see table) and were repaired.

Summing up the group of cases so far considered, numbering 2,042, we have abortions, 1,124; ectopics, 30; pregnancy, 359; and those delivered outside, 529.

We now come to consider those that were delivered in the house, viz., 4,263 cases. Of this number 3,522 were classified as parturition, 100 complicated following delivery, 291 premature births, and 350 still-births.

This complicated group seems to embrace half of the diseases found in the history of medicine, as diphtheria, malaria, typhoid, scarlet fever, etc. (consult the table). Two cases of post-partum hemorrhage, this with the two cases brought into house, makes four, all recovering. Eclampsia 12 cases, 8 dying. Add this to the number brought into house, delivered outside, viz., 19 cases; 31 cases in all; 12 recoveries, 19 dying. This gives the high mortality of 61+ per cent., but by consulting history of cases we find that 13 eclamptic cases followed delivery in hospital, with 5 deaths—mortality being 38.5 per cent.

There were only 3 cases of placenta prævia recorded, this added to those (9) delivered outside giving history of placenta prævia, gives us 12 cases, one death, a mortality of 8+ per cent.

COMPLICATIONS FOLLOWING DELIVERY.

	Total.	Discharged.			
		Well.	Improved.	Unchanged.	Died.
Premature birth	290	2	1	1	....
With malformed heart	1	....	....	....	....
Still birth	350	....	....	....	....
Parturition	3522	3501	21	....	....
With diphtheria	1	....	1	....	....
With typhoid fever	1	1	....	....	....
With typhoid fever and pneumonia	1	....	....	....	1
With malaria	2	2	....	....	....
With malaria and cystitis	1	....	1	....	....
With measles	2	1	1	....	....
With measles and diphtheria	1	....	....	....	1
With measles, placenta prævia and sepsis	1	....	....	....	1
With lobar pneumonia	3	1	1	....	1
With scarlet fever	1	1	....	....	....
With cystitis	1	1	....	....	....
With salpingitis	3	2	1	....	....
With endometritis	2	2	....	....	....
With retained placenta	1	1	....	....	....
With placenta prævia	3	2	1	....	....
With subinvolution	1	1	....	....	....
With fibroid tumor	1	....	1	....	....
With contracted pelvis	2	....	....	....	2
With contracted pelvis and pneumonia	1	....	....	....	1
With eczema and scabies	1	1	....	....	....
With abscess breast	4	3	1	....	....
With hydramnios	1	1	....	....	....
With hydramnios and pudendal hernia	1	1	....	....	....
With poly-hydramnios	1	1	....	....	....
With accidental hemorrhage	2	2	....	....	....
With post-partum hemorrhage	2	....	2	....	....
With eclampsia and pneumonia	1	....	....	....	1
With puerperal sepsis	17	7	2	....	8
With puerperal peritonitis	1	....	....	....	1
With puerperal eclampsia	11	2	2	....	7
With puerperal mania	1	1	....	....	....

COMPLICATED PARTURITIONS.

	Total.	Discharged.			
		Well.	Improved.	Unchanged.	Died.
Parturition with sepsis and tetanus.	1	....	....	....	1
With sepsis and salpingitis	1	1	....	....	....
With secondary syphilis	2	1	1	....	....
With arsenical poisoning	1	1	....	....	....
With epilepsy	1	....	1	....	....
With cerebral thrombosis	1	....	1	....	....
With paralysis (birth palsy)	1	1	....	....	....
With imbecility	1	1	....	....	....
With chorea	1	1	....	....	....
With myocardial insufficiency	1	....	1	....	....
With congestion of lungs and kidneys	1	....	....	....	1
	1	....	....	....	1
With gastritis and vomiting	1	1	....	....	....
With gastro-enteritis	1	....	....	....	1
With catarrhal jaundice	1	1	....	....	....
With abscess of liver and acute nephritis	1	....	....	....	1
With general peritonitis	1	....	....	....	1
With suppurative peritonitis	1	....	....	....	1
With peritonitis and pyrexia	1	1	....	....	....
With acute nephritis	1	1	....	....	....
With chronic nephritis	3	....	2	....	1
With uremia	4	....	....	....	4
With uremia and eclampsia	1	....	....	....	1

The following table gives the number of operations performed each year with results. By consulting this table you will note that the greatest number of operations performed in one year was 45 (1889) and the least number (1913), namely, 11.

Year.	Success.	Partial Success.	Failure.	Died.	Year.	Success.	Failure. Success.	Partial	Died.
1894	14	....	1	....	1905	36	....	....	2
1895	17	....	....	1	1906	43	....	....	....
1896	15	....	....	1	1907	18	....	....	....
1897	29	....	....	....	1908	18	....	....	2
1898	17	....	....	1	1909	33	....	....	1
1899	45	....	....	....	1910	18	....	....	....
1900	30	1	....	....	1911	15	....	....	....
1901	40	1	1	2	1912	13	....	....	1
1902	27	1	....	....	1913	11	....	....	....
1903	17	1	....	....					
1904	18	....	....	....	Total.	474	4	2	10

OPERATIONS PERFORMED.

	Success.	Paritla Success.	Failure.	Died.
Abortion (curetting uterus)	65	1	....	....
Abortion incomplete (curetting uterus)	25	2	....	....
Abortion with sepsis (curetting uterus)	3	....	....	2
Abortion with endometritis and menorrhagia (curetting uterus)	1	....	....	....
Abortion with retained placenta (curetting uterus)	18	....	....	....
Blighted ovum (curetting uterus)	1	....	....	....
Retained placenta (curetting uterus)	24	....	....	....
Sepsis post parturition (curetting uterus)	....	....	....	3
Sepsis (curetting uterus)	3	....	....	2
Hemorrhage post abortion (curetting uterus)	2	....	....	....
Retained placenta with hemorrhage (curetting uterus)	4	....	....	....
Adherent membranes post abortion (curettage with removal)	4	....	....	....
Retained placenta laceration cervix (curettage with trachelorrhaphy)	1	....	....	....
Laceration perineum (curettage with trachelorrhaphy)	2	....	....	....
Abortion incomplete (curettage with dilatation of cervix)	1	....	....	....
Abortion inevitable (curettage with delivery)	2	....	....	....
Laceration cervix (trachelorrhaphy)	45	....	....	....
Laceration cervix and perineum prolapse vagina (anterior colporrhaphy, trachelorrhaphy, secondary perineorrhaphy)	1	....	....	....
Old laceration perineum prolapsed uterus (posterior colporrhaphy ventral fixation)	1	....	....	....
Laceration cervix endometritis (trachelorrhaphy curetting uterus)	1	....	....	....
Laceration perineum (anterior colporrhaphy and perineorrhaphy)	2	....	....	....
Old complete perineal tear (colporrhaphy and perineorrhaphy)	1	....	....	....
Laceration perineum (perinerrhaphy)	60	1	....	....
Laceration perineum through external sphincter ani (perineorrhaphy)	1	....	1	....
Laceration perineum old (perineorrhaphy secondary)	2	....	....	....
Laceration perineum (colpo-perineorrhaphy)	3	....	....	....
Laceration perineum (plastic perineorrhaphy)	1	....	....	....
Laceration perineum (flap perineorrhaphy)	2	....	....	....
Laceration perineum (toilet flap-splitting operation)	1	....	....	....
Laceration pelvic floor (perineorrhaphy)	4	....	....	....
Laceration perineum and cervix (perineorrhaphy and trachelorrhaphy)	27	....	....	....
Difficult labor (application forceps)	3	....	....	....
Prolonged labor (application forceps)	66	....	....	....
Persistent R. O. P. (application forceps)	2	....	....	....
Contracted pelvis (application forceps)	4	....	....	....
Breech presentation (application forceps)	8	....	....	....
Uterine inertia (application forceps)	4	....	....	....
Rachitic pelvis (application forceps)	....	....	1	....
Impacted head (application forceps)	1	....	....	....
Rigid perineum (application forceps)	9	....	....	....
Exhaustion (application forceps)	1	....	....	....
Exhaustion kidney insufficiency (application forceps)	2	....	....	....
Heart case in extremis (application forceps)	1	....	....	....
Difficult uterine contraction (application forceps)	1	....	....	....
Brow presentation (application forceps)	1	....	....	....
Prolonged labor (forceps craniotomy delivery of dead child)	1	....	....	....
Triplets (forceps second podalic version third)	1	....	....	....
Prolapsed cord (forceps reduction cord)	1	....	....	....
Abortion (forceps)	1	....	....	....
Puerperal eclampsia (forceps artificial delivery)	....	....	....	1
Contracted pelvis (podalic version)	3	....	....	....
Parturition placenta prævia (podalic version)	2	....	....	....
Parturition accidental hemorrhage (podalic version)	1	....	....	....
Parturition dystochia (podalic version)	1	....	....	....
Parturition twins placenta prævia (podalic version)	1	....	....	....
Parturition twins (podalic version)	2	....	....	....
Parturition transverse position (podalic version delivery)	1	....	....	....
Parturition sepsis gonorrheal cystitis (podalic version dilatation cervix)	1	....	....	....
Parturition transverse position prolapsed arm (podalic version)	1	....	....	....
Parturition prolapsed hand membranes not ruptured (podalic version bimanual replacement hand)	1	....	....	....
Contracted pelvis (craniotomy)	1	....	....	....
Parturition large living child, pelvis 8 cm. conjugate (craniotomy)	1	....	....	....
Abortion incomplete (craniotomy)	2	....	....	....
Parturition, large dead fœtus (embryotomy)	1	....	....	....
Pregnancy (Cesarean section)	2	....	....	....
Pregnancy pelvic tumor (Cesarean section)	1	....	....	....
Pregnancy contracted pelvis (Cesarean section)	2	....	....	....
Pregnancy deformed pelvis (Cesarean section)	2	....	....	....
Placenta prævia contracted pelvis (Cesarean section)	1	....	....	....
Pregnancy (Cesarean section ligature Fallopian tubes)	1	....	....	....
Pregnancy of fibroid uterus (Cesarean section, delivery of living child)	....	....	....	1
Pregnancy (Cesarean section, Porro)	....	....	....	1
Premature labor (induction of)	....	....	....	....
Premature labor and version (production of)	....	....	....	....
Pregnancy reflex vomiting (induction of premature)	1	....	....	....
Incontinence of urine (labor)	....	....	....	....
Abortion (forced delivery curettage)	1	....	....	....
Abortion incomplete (forced delivery)	....	....	....	....
Abortion inevitable (forced delivery)	....	....	....	....
Pregnancy in uterus with amputation cervix and anterior fixation (forced delivery incision through cicatricial tissues of cervix)	1	....	....	....
Retained placenta (evacuation uterus by hand)	4	....	....	....
Puerperal hemorrhage (evacuation uterus by hand)	1	....	....	....
Abortion (evacuation uterus by hand)	5	....	....	....
Abortion complete (evacuation uterus by hand)	2	....	....	....
Laceration perineum old (Tait's operation)	1	....	....	....
Pregnancy ectopic (abdominal section removal of embryo and membranes)	1	....	....	....
Pregnancy ectopic (right salpingo-oophorectomy left tube)	....	....	....	....
Pregnancy ectopic with fibroid uterus (abdominal section exploratory)	1	....	....	....
Pregnancy tubal ovarian cyst (bilateral salpingo-oophorectomy removal of cyst and ectopic pregnancy)	1	....	....	....
Dead foetus (removal)	1	....	....	....

Obstetrical operations performed, 474; four cases classified as a partial success, two as failures, ten deaths, giving a mortality rate of 2.11+ per cent.

Causes given for death as follows: Abortion with sepsis, two; sepsis post-partum, five; puerperal eclampsia, forceps, artificial delivery, one; Cesarean section (fibroid), one; Cesarean section (Porro), one.

Following I give a list of the operations made: Dilating of cervix, curetting, primary and secondary perineorrhaphy, trachelorrhaphy, anterior and posterior colporrhaphy, forceps, version, craniotomy, embryotomy, induction of labor, abdominal section and Cesarean section.

Curetting of uterus was performed 156 times with seven deaths, the cause of death being sepsis. These cases that died were probably brought into the hospital thoroughly septic from retained secundines and decomposed placenta, or had had a criminal operation performed.

Perineorrhaphy (primary) about one hundred cases. This is a very small number and many cases operated were not recorded. In looking through this list you find that different operations were made by different operators.

Lacerations of cervix and perineii are so common that 33 1-3 per cent. in primipara and 10 per cent. in multipara would be about the average.

Forceps applied 101 times, for the following causes: Difficult labor, prolonged labor, persistent R. O. P., contracted pelvis, breech presentations, uterine inertia, rachitic pelvis, impacted head, rigid perineum, exhaustion, heart trouble, extreme uterine contraction, brow presentation, triplets, prolapsed cord, abortion, eclampsia. One case, that of eclampsia, died.

Studying the above, we note the variety of causative factors requiring the use of forceps, and also note the few times they were applied. It is hard to realize that they were used so infrequently, when private records disclose their use in from 5 to 20 per cent. of cases. By comparison I give the records as to frequency in the following hospitals: Paris Maternity, 6 per cent.; Glasgow Maternity, 8.5 per cent.; Brussels Maternity, 1.3 per cent.; Ahlfeld reports, 2.75 per cent.; Edgar, 10.5 per cent.; Cincinnati Hospital, 2.04 per cent.

Podalic version was performed fourteen times for following indications: Contracted pelvis, placenta previa, accidental hemorrhage, dystochia, twins, abnormal presentations and prolapsed extremities. No *maternal* mortality.

Version usually performed in about 2 per cent. of cases; that is, once in every fifty cases, and this record of only fourteen times in 4,263 cases makes this fact of record in doubt.

Craniotomy was performed only four times, indications as follows: One contracted pelvis, one large child, one complicated by contraction in anterior posterior diameter, one incomplete abortion. No maternal mortality. Craniotomy is usually performed one in 300 to 500 cases, so again only four times in 4,263 cases makes this record seem inaccurate.

Embryotomy was performed once for large dead fetus without maternity mortality.

Cesarean section performed eleven times, two died. Indications for its performance, pelvic tumor, contracted tumor, contracted pelvis, deformed pelvis, deformed pelvis with placenta previa, and fibroid complicating; two died, the case complicated by fibroid and the one in which a Porro was made. This gives a mortality of 18 per cent., but the cases reported are not numerous enough to make this mortality rate of value.

Induction of premature labor and forced labor was performed thirteen times. Indications, vomiting, abortion, pregnancy in uterus, the cervix having been amputated and an anterior fixation. No maternal mortality.

Uterus evacuated by hand, twelve cases recorded. Indications, hemorrhage, retained secundines and placenta and abortion. No maternal mortality. This, for this class of cass, is rather exceptional.

Ectopic pregnancy, only five cases recorded in this department where operations were made; other cases transferred; of these cases, one was complicated by a fibroid and one by an ovarian cyst. No maternal mortality.

DISCUSSION.

Dr. James W. Rowe: I think the fact that midwives are untrained and ignorant is a calamity, indeed, but I do not think the properly trained and conscientious midwife is such a bad article. I feel like calling attention to the fact that our knowledge of puerperal sepsis had its origin in the fact that doctors have met with more trouble than midwives.

Another statement, which I believe myself (some of you may not, and it is not at all to our interest that you should agree with me), is that midwives have done a whole lot less harm by waiting than doctors have by interfering. I know that midwives are going. I shall not try to keep them, if the State wants to get rid of them, but I do believe that among the poorer class of people, properly trained midwives are of some use.

The low percentage of application of forceps reported must be of great interest to the ex-interne. When I was junior in obstetrics, we used to have to do craniotomies with a clamp and a pair of scissors—a big clamp and a long-bladed pair of scissors. Although done according to this rather crude method, they usually got along all right.

Dr. J. Ambrose Johnston: I rise especially to give emphasis to the remarks of the previous speaker. In general, there is too free use of parturient forceps. I have even felt that it might prove a blessing to women if the profession would issue an edict that all forceps should be cast in the bottom of the sea. Only the other day, I repaired a vesico-vaginal fistula, which was due to the use of forceps. Too often do we have to repair torn cervices and perinei. I only relate this because it is more recent. However, I have seen a number of such cases, the results of which have been to poison my mind against the indiscriminate use of forceps.

Dr. G. Mombach: There is one thing that has interested me very much in the report just given, and that is the exceedingly high mortality rate of eclampsia, namely, about 60 per cent. I also noticed that in the different operations cited, the doctor mentioned none that had been used as an interference in eclampsia. The experience of the largest European clinics

has been that immediate delivery is the best method of treating eclampsia. Bumm reported a maternal mortality of 12 per cent., and Fromme reported a maternal mortality of 9 per cent. in cases where rapid delivery had been induced, following the first eclamptic attack. The sooner after the attack operative interference had been instituted, the better the results seemed to be. As compared with these, our mortality rate suggests that we are considerably behind times when we treat our eclampsias with veratrum viride, or morphine, or other drugs. The proper and only thing to do as soon as a case is recognized as one of eclampsia is to empty the uterus. If the os is already dilated, forceps or version are proper. With an intact cervix the best and surgically cleanest method is an anterior hysterotomy, otherwise erroneously known as vaginal Cesarean section.

Dr. Magnus A. Tate (in conclusion): I have not attempted to give my own personal views as to treatment of subjects brought forward in this paper. I have simply given a statement gleaned from the records as they existed in the City Hospital. Most of you know how I feel about veratrum. I am glad to know that there are others who agree with me.

Correspondence

COLONEL ELLIOT'S REPLY.

Editor Lancet-Clinic:

I have read with the deepest mortification the letter you have published from Dr. Vail in your issue dated April 4, 1914. The terms used in what should have been a scientific discussion surprise and shock me.

My statement that I had never met anyone who had seen Dr. Fergus perform his operation was to the best of my belief absolutely true. Dr. Vail says he described it to me at length. I can only say that I have searched my memory in vain for any recollection of such an incident. I do not say that Dr. Vail did not mention it to me; for it would be impossible to make such a statement without the fear that one's memory had betrayed one. I can only say that I have no recollection of it. It must be obvious that had I had such an incident in mind, I should not have made a statement of such a nature in a publication of world-wide circulation. Apart from any other consideration, such an act would have been childish.

Why did Dr. Vail not write to me at the time—now more than four years ago—and draw my attention to the alleged discrepancy? He was personally acquainted with me.

Why did Dr. Vail go to the trouble of having a reprint made and circulated throughout the United States?

Why did he not send me a copy of the reprint?

When I sent off my article to the Ophthalmoscope, I was unaware that anyone had used the trephine in glaucoma. It was unnecessary for me to have added a postscript, even if it had been possible, since Dr. Fergus' paper was already out, proving his priority in the use of the trephine. I have never claimed priority, and under the circumstances it seems to me strange to credit me with bad faith over a claim I have never made. I find it difficult to understand the argument.

As to my case reports and statistics: They have always been open to anyone's inspection. Captain W. C. Gray, who has been acting as superintendent of the Government Ophthalmic Hospital, since I left, or Major S. Kirkpatrick, who is, I understand, about to take over the hospital, or Lieutenant H. C. Craggs, my late chief assistant, who assisted me from my first trephining onwards, will doubtless answer any question that may be asked them. They have my fullest consent to do so. The address, Government Ophthalmic Hospital, Madras, India, will find any one of them. Yours truly,

R. H. Elliot, M.D., Lt. Col. I. M. S.

April 14, 1914.

Cincinnati, O., May 1, 1914.

Editor Lancet-Clinic:

Since Lieut.-Col. Elliot's letter of April 14, published above, answering my correspondence appearing in your issue of April 4, 1914, contains no refutation of my statements in that letter, I see nothing for me to answer.

That his memory may have betrayed him in such a matter as this is an unfortunate weakness for him to admit.

He leads the casual reader to think this is a controversy on priority. There is, as he so forcibly reiterates, no ground whatever for priority controversy, for so far as I know no one has charged that he (Col. Elliot) ever claimed priority.

Sincerely yours,

D. T. Vail.

May 1, 1914.

Society Proceedings

THE ACADEMY OF MEDICINE OF CINCINNATI.

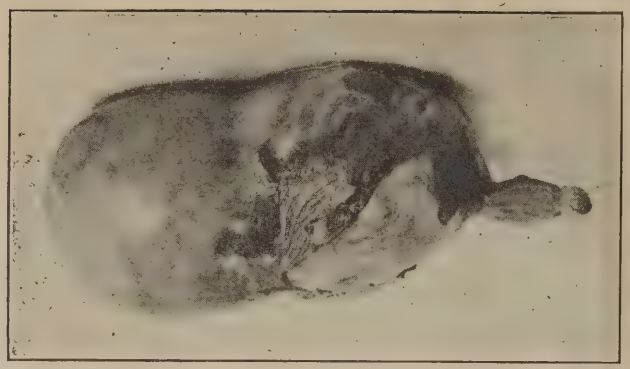
A. B. Thrasher, M.D., President, in the chair.
C. T. Souther, M.D., Secretary.

Meeting of April 27, 1914.

Ovarian Cyst and Tubo Parovarian Cyst in the Same Patient.

Dr. D. D. DeNeen: Patient, aged thirty-two, married and sterile, was examined four years ago. At that time I found a retroverted uterus but no other pathology. Her abdomen was thick, and while small cystic ovaries might have been present, I am quite certain that no gross pathology existed. An operation for the retroverted uterus was declined. About one year ago the patient again presented herself for an examination. The uterus was pushed almost out of the vagina. A hard mass was found in the vaginal roof. Since the patient did not wish to remove her corset, no further examination was made at this time.

Operation was performed at Bethesda Hospital, April 29, 1913. A suprapubic incision was made and a cystic ovary was found, which extended above the umbilicus. The cyst was tapped. Since no pedicle was present, great difficulty was experienced in removing the cyst. Linen ligatures were passed through



Tubo-Parovarian Cyst.

the broad ligament and the cyst was slowly cut away. A few ligatures were used at a time and then a small portion was cut, then more ligatures were used until the task was finally completed.

The so-called tubo-parovarian cyst was found on the left side up above the umbilicus. A piece of omentum constricted it. Linen ligatures were used to ligate the tube and tissue attached to the cyst. Fimbriæ of the tube may be found on the inner surface of the cyst. In this cyst, the fimbriæ are found within the tube and cyst. This tubo-parovarian cyst contained twenty-seven ounces of fluid. Dense adhesions surrounded the uterus. In fact, the pelvic floor was a mass of adhesions. Recovery uneventful. Menstruation is regular and without pain. Tubo-ovarian cyst is a misnomer. This condition is a complication. Sometimes the fluid passes through the tube into the uterus.

Carcinoma of Stomach—Resected—With Presentation of Specimen.

Dr. D. W. Palmer: I present this case report, with microscopic slide, gross specimen and the X-ray plates, for three reasons: First, because it is one of the type of cases that are so apt to be overlooked during the time when greatest good can be done; second, it is a clinical as well as pathological demonstration of the factor gastric ulcer plays in a more or less large percentage of stomach carcinoma; third, absence of blood and a normal gastric analysis does not contradict a cancer diagnosis.

Miss M. D., aged fifty-three, referred by Dr. H. W. Bettmann and Dr. J. M. Blau, voluntarily gives only a four months' history, but on direct questioning gives a history of over five years of intermittent attacks of epigastric distress lasting from a few days to a few weeks, sometimes associated with mild pain never severe enough to interfere with daily work. She has spit up some food and sour material during attacks that has eroded the teeth. She belched gas, and some foods caused distress. There is no distinct history of "food relief" or "hunger pains." She had taken frequently, with benefit, over a five-year period a powder prescribed by Dr. Bettmann for hyperchlorhydria in a sister. No hemorrhages noted. She saw no physician during this period, and yet this is the period she could have obtained the greatest benefit with the least risk. Four months ago she began having a great deal of distress in the stomach after eating, and at first, vomiting a few times a week of undigested food and food remnants. Later this vomiting became a daily affair. She had a sense of great fullness in the epigastrium. No blood was ever seen in the stool or vomitus. She lost weight and strength, and a few days before I saw her in consultation she saw Dr. Bettmann for the first time. The pyloric obstruction picture was complete, and we palpated a very much thickened pylorus forming a movable tumor. Stomach analysis, HCl, 22; total acid, 54; no blood. A later test meal at the hospital showed no blood. Dr. Lange will show the X-ray plates verifying the obstruction and showing a filling defect at the pylorus which he attributed to an "infiltrating carcinoma."

April 16, 1914, at Christ Hospital, I resected about two-thirds of the stomach with one inch of the duodenum and the glands in the attacked mesenteries. The specimen passing around shows a greatly thickened stomach wall at the pyloric end, and a normal, thin duodenum. Inside you see a small healed ulcer from the border of which is cut a wedge of tissue. The rest of the mucous membrane is intact. The cartilaginous thickening which extended a full inch and a half from the pylorus was best marked in the fresh specimen, for now the solutions have greatly shrunk and hardened the entire mass. This infiltration caused closure of the pylorous to such a degree that a pencil could hardly be forced through. The hardening stopped abruptly at the pylorus.

The microscopic report by Dr. F. B. Sampson is as follows: "The section taken from the floor of the ulcer and extending down into the pylorus shows the full thickness of tissue beneath the ulcer and the pylorus. Cancer tissue is seen in patches throughout the full thickness of both stomach and pylorus. The muscular coats are much thickened. Scar tissue is seen covering the ulcer area. Epithelium and gland elements at site of ulcer are necrosed and eroded. Cancer cells are seen to have penetrated between the bundles of muscles, cells of both muscle layers. Much round cell infiltration is seen beneath and around the ulcer."

To-day, the eighth post-operative day, the patient is taking light diet at meal time in six-ounce quantities, with fluid nourishment between meals. Pulse, temperature and respiration have been normal since the first twenty-four hours. This woman, at worst, should have two years of comfort.

Dr. Sidney Lange: The X-ray plates which Dr. Palmer presented here to-night in connection with his case, form a most interesting part of this very excellent case report. I was asked to make these plates not to establish the diagnosis of carcinoma, for that had already been established, but I was asked to determine the exact location of this growth, whether it involved the pylorus or whether it involved the greater and lesser curvatures, and to in this way determine the operability of the growth. The plates show positively the presence of an infiltrated mass which surrounds the pylorus in circular fashion, obstructing the waves and obliterating the sphincter contours. The appearance on the plates was that of a typical ring carcinoma. The growth did not extend any dis-

tance along the greater or lesser curvatures and appeared therefore operable.

This case report is certainly a classical one: There is the ulcer history of some years' standing, the clinical symptoms justifying a diagnosis of carcinoma, the X-ray findings showing the exact location, extent and operability of the growth, and the very successful resection of the growth by Dr. Palmer. Finally, we see the specimen presented, showing the infiltrating mass around the pylorus and distinct evidences of the old ulcer base.

Tubercle of the Mammary Gland Simulating Cancer.

DR. J. EDWARD PIRRUNG: On April 23, 1914, I was consulted by Mrs. W., aged fifty-six. She was referred to me by Dr. A. Her present complaint is that of a growth in the left breast. She said the tumor was not painful and that it was of slow growth, the period of development being about six months. Past history was that of ordinary diseases of childhood. At twelve years of age, she had an infection of the cervical lymphatics, suppuration ensuing and sinuses persisting in the neck for a considerable time thereafter, eventually healing. At about the time of the occurrence of the cervical suppuration, she had an involvement of the left hip joint which caused some deformity and shortening of the limb. At present she seems in very good health and has a weight of 160 pounds. There is at present no lesion in the lungs. The heart is normal. Abdominal cavity presents nothing special. There is a left inguinal hernia. The left hip motion is limited. The knee is slightly flexed. The left leg is somewhat smaller than the right one.

Examination of the Breast: The left breast shows a dimpling and slight retraction of the nipple. There is a tumor mass in its center. A small lump is observed to the inner side of the left breast, near the costochondral angle. There is no enlargement, nor is there induration in the axillary lymphatics. A diagnosis of cancer of the mammary gland was made.

Operation, April 25, 1914: Examination of the breast at this time (patient was under ether anesthesia) shows two distinct masses, one in the center of the breast, firmly adherent and immovable, the other at the inner side of the breast; the smaller of the two is movable and softer than the central mass. It is connected by firm fibrous tissue to the central tumor. The diagnosis was now changed to a probable tuberculosis. Operation revealed a cold abscess of tubercular origin connected by a sinus with the costochondral angle of the fifth rib. The breast was removed. The cartilage and the bone was cleared of the infection and cleansed with phenol. We could not determine a sinus communicating with the pleural or pericardial sacs. The closure of the wound was done with wire and silkworm gut. I expect a very satisfactory cure in this case. There is a slight danger of a sinus persisting in these cases. I do not expect it in this case. The dressing this morning shows healing to be by first intention and very satisfactory.

This, then, I believe to be a case of tuberculosis extending from a lesion behind the breast, a sinus passing behind the pectoral muscles and into the gland proper. It could have been primary tuberculosis (?) of the gland, the extension from the breast passing behind the pectoral muscles and infecting the angle of the ribs. Because of the infrequent involvement of the breast by tuberculosis, I lean to the bone lesion as the primary one. I believe that gland and bone tuberculosis represent a peculiar strain or family group of the tubercle bacilli, and this case would tend to so prove after forty-two years' harboring of tubercle bacilli in her body, she developed lung lesions, but a further extension occurs along lymphatic structures and bone.

Case of Ulcus Mollea of Phagedenic Character.

DR. M. L. HEIDINGSFELD: This patient, aged thirty-two, was admitted to the Cincinnati Hospital for an ulcer measuring several inches in its various diameters at the junction of the thigh and left vulva. Its very extensive and deep ulcerated character, everted border, foul odor, somewhat characteristic of that of malignancy, led to the suspicion that it was of malignant carcinomatous character. The strong reactionary inflammation about the borders and the soft, ragged character of the ulcer, led me to believe that the lesion was chancroidal and of phagedenic rather than malignant nature. In view of its very persistent and refractory nature, a portion was submitted to histologic examination and the blood of the patient was examined by the Abderhalden complement fixation test for malignancy. Laboratory report was "not actively malignant." The complement fixation test was strongly positive. The patient is rapidly improving under local treatment, and bids fair to make a complete recovery in a comparatively short time. From a purely clinical and therapeutic standpoint, malignancy in my judgment is no longer tenable.

This case is presented not only because of its somewhat unusual and interesting clinical nature, but to bring to our consideration these newer laboratory methods of supposed greater precision and reliability. We are interested to learn as soon as possible their trustworthy and reliable nature, and wherever there is any disparity between clinical nature and laboratory report, these features are worthy of our prompt consideration. The case does not bear conclusive evidence as yet in either direction, and this preliminary demonstration will be followed by subsequent report and presentation of the patient, if circumstances permit, at some later date.

DR. M. L. HEIDINGSFELD again demonstrated the case of vaccinia which resisted all forms of treatment for two years, and is now improving under quinine injection.

DR. JAS. W. MILLER: The brilliant result from the use of quinine administered intravenously is interesting. This case, I understand, has been in the hospital for two years. I am interested in knowing if during that time she has received quinine by mouth. We have known for a long time that quinine or its salts have been used in cases of skin eruption showing bullæ, as in pemphigus, with good results.

DR. OSCAR BERGHAUSEN: It was my privilege to

make an examination of the blood in this case, the patient having been brought to the City Hospital. I found it most interesting. The first examination showed a positive Wassermann reaction, the history extending back over ten years. At one time she had a suspicious eruption, which resulted in a questionable diagnosis of smallpox, and for which she was accordingly sent to the Contagious Hospital. At present she has a distinct epithelioma of the skin. Dr. Woolley explained it on the basis that it was not merely an epithelial hyperplasia, but a dipping downward of the epithelial growth into the deeper tissues. The blood tests showed a positive malignancy reaction to epithelial tissue and also to a sarcoma of ovarian tissue. In going deeper into the history, we found that she had been operated upon ten years ago, when one ovary, tube, and a portion of the ovary on the opposite side had been removed. She was then but nineteen years old, and was told at that time that she had cancer. The possibility remains, however, that the condition at that time was probably either of a sarcomatous nature or one of the proliferating types of cysts.

Dr. Heidingsfeld: In reply to Dr. Miller's question, I can not state without consulting the records, whether or not this patient received quinine. This child has been a patient at the Cincinnati Hospital for two years, and it is probable that she has received at one time or another, in addition to her varied treatment, quinine internally. It is not a remedy, however, that is generally recommended for the treatment of this condition. Furthermore, I do not believe that if quinine had been administered internally, it would have effected the result shown this evening. Quinine has been administered internally without any success for pemphigus vulgaris, but the intravenous administration of the remedy alone has been attended by marked improvement. It seems to me that quinine administered intravenously may have a wide field of useful application, judging by the results in this particular case. Changes which are so marked in character and which have occurred in such a short space of time speak for themselves.

In reference to Dr. Berghausen, I beg to state that the case was not presented with the idea of casting any reflection upon the laboratory features set forth. I think that the men who are engaged in this work deserve the highest degree of commendation and consideration for their efforts to establish methods of greater precision and reliability. I am sure we all feel greatly interested to learn as much as we can regarding the Abderhalden test. We are interested to learn as soon as possible its reliable and trustworthy nature. It is equally, if not more important, to know if it has any shortcomings in this direction, namely, positive test and no malignancy, or malignancy and negative test. While this case is not as yet of a conclusive character and will not be until complete recovery is definitely established, I am inclined to believe from a clinical and therapeutic standpoint, that it is of a simple, non-malignant, rather than malignant character.

Entire Mucous Membrane of Gall-bladder Cast Off.

Dr. W. D. Haines: I present this specimen as a clinical curiosity. It is the entire mucous membrane of a gall-bladder. The specimen was removed in the course of an operation for empyema of the gall-bladder. The patient was referred for operation by Dr. J. C. Buttemiller and gave a gall-bladder history familiar to all of you, which extended over many months; she was intensely jaundiced and running an elevation in temperature at the time of her admission to the German Deaconess Hospital. When the abdomen was opened we found a greatly distended gall-bladder, the contents of which proved to be a quantity of thick, yellow pus and a number of gall-stones.

On enlarging with a knife the little puncture made by the trochar in the fundus of the gall-bladder for the purpose of more readily abstracting the stones, a portion of the specimen which I present herniated through the opening. Gentle traction on the protruding mass brought away the entire mucous membrane lining of the gall-bladder and the first portion of the cystic duct. You can readily make out the little curves corresponding to the valves of Heister. This left the muscular coat of the bladder covered by peritoneum into which we inserted a drainage tube and closed the abdomen. Free drainage continued for two weeks, and the patient at this time is feeling well and practically ready to leave for home.

Opthalmology

K. L. STOLL, M.D.,

Clinical Instructor in Ophthalmology, Medical Department, University of Cincinnati,

CINCINNATI.

Ocular Blennorrhea of the New-Born.

Some differences of opinion still exist among the oculists regarding the nature of the various post-partum manifestations in the conjunctiva of the new-born baby. The value of the silver preparations is established beyond doubt, while their use has been introduced and is becoming obligatory in many civilized countries. Any doubt will be readily dispersed by the information gained from the monograph "On the Ocular Blennorrhea (Augeneiterung) of the New-Born," by Crédé-Hörder, 140 pages, with thirty-three cuts, published by S. Karger, Berlin. This valuable book was reviewed by Prof. Axenfeld of Freiburg, Germany (Klin. Mbl. f. Aughk., Vol. 52, page 329, 1914).

Etiology and pathology are the introductory subjects, the book proper being devoted to therapy and prophylaxis. In the non-gonorrhoic catarrhs of the conjunctiva, the author sees the sequelæ to intra-partum injuries followed by infection. In reference to the specifically gonorrhoic conjunctivitidis, he mentions the so-called late infections and the possibility that gonococci may remain latent in the Meibomian glands.

The principal stress of the publication is laid upon considerations of *prophylaxis* and the research work of the comparative *action and durability of the various*

silver preparations in use. The complete gynecological and statistical material is given in a clear and readily comprehensible manner. Crédé shows that the "classical" treatment with the instillation of silver nitrate has yielded entire series of cases free from infection. He does not believe in the superiority of the modern silver preparations, although he admits the value of the "sophol prophylaxis" demonstrated by von Herff. Like sophol, he considers argentum aceticum more effective than protargol. To this question he adds the result of a circular letter sent to ophthalmologists and obstetricians. From these we learn that nobody experienced any damage after the careful instillation of silver nitrate, which is the most commonly used. By microscopic examination of eyes of rabbits and of children who died during the first days after birth, Crédé was able to show that the instillation of silver nitrate caused merely a transient irritation of the conjunctiva but no deeper lesions. He champions obligatory reports of afflicted cases and the "Crédé treatment" with 1.5 per cent. silver nitrate (three drops), or sophol (von Herff), or 1.3 per cent. argentum aceticum (Zweifel). Exact considerations of the technique of prophylaxis, the education of the public and the instructions of midwives form the conclusions of this instructive book. Erroneous, in Axenfeld's opinion, is Crédé's opinion that the conjunctiva may become infected by migration of the germs from the nose upward through the naso-lacrimal duct. He deems it advisable, though, that material may be carried from the outside into the nose, wherefore cleansing of the nostril after birth would be advisable.

Eye Injuries in War.

"Manual of Practical War Surgery" is the title of a small but interesting book by Dr. Walter von Oettingen, late chief surgeon at the Livland (Russian) Field Hospital of the Red Cross during the Russo-Japanese War. It was published by Theodor Steinkopf (Dresden and Berlin) in 1912, and contains in its 377 pages a great mass of most valuable information concerning the origin and type of injuries and their treatment. Although profitable principally to the surgeon, the oculist will gain from this book a good idea of the injuries which endanger the eye directly and indirectly. Being merely a manual, it can not equal the tremendous statistical value of the "Medical and Surgical History of the War of the Rebellion," issued by order of Congress in 1875 to 1879. In this extraordinary work we find a great number of eye cases among the 9,815 face injuries, 671 of which came to plastic and other operations. Von Oettingen lays more stress on the nature of the injury and their treatment. The casualities of the eye may be divided into the direct and secondary types. Almost any injury occurring in time of peace may happen and be followed by infection. The "gouging" of the eye and the pocketing into it of a thumb are especially mentioned as the results of a close fight without arms. Total evulsion of the eyeball has not come to the author's observation. He, therefore, deems it an impossibility, owing to the smoothness and resistency of the globe, although such an event happened in Cincinnati some twenty years ago, when a fireman was struck in the face with a stream of water from a fire hose.

This primitive "hand-to-hand" method of attacking the enemy's eye is, of course, very effective if it succeeds. A man is disabled at once by pain and the inability to open the other eye. It is evident that these injuries are very apt to become infected by the hand acting as the carrier. When it came to a close battle without arms, these modern warriors fought occasionally with their teeth like primitive man. They snatched nose, ear, finger or the cheek of their adversary, and by their bites furnished a good chance for secondary infection. (We wish to refer to a case, published several years ago, of a young man whose cheek was bitten by an enraged woman. Erysipelas developed, which destroyed one of his eyes. The medical profession will also remember the malpractice suit of a prominent man of this city, who lost the vision of one of his eyes as a consequence of a corneal ulcer resulting in a leucoma after an operation on the frontal sinus of the same side.)

Destruction of an eye may follow a glancing gunshot, or one perforating the temple and striking the eye, or penetrating it from the front. These cases need not be fatal. (We refer to the case published by Roy in the "Journal de Medicine et de Chirurgie" of August, 1912. A man had been shot in the temple two years previously, and became blind in both eyes the following day. The bullet was located in the chiasm by means of radiograms. A similar case—blind only on the side of the gunshot wound in the temple—is living in this city, after having attempted suicide in the first week of March of this year.)

The eyes may be secondarily endangered by gunshot and other injuries to the skull. This type is of the greatest importance. One-half of all the fatalities of the "firing-line" occur through head-shots, according to Oettingen, the most frequent firing distance being that of about 500 meters. Direct shots of a modern rifle, fired at 200 to 300 meters, burst the skull, while hits from a distance of 2,000 meters may still cause death. Not every hit, however, even from a close range, needs to be followed by death; it depends on the way in which the bullet strikes the skull. About 25 per cent. of those suffering a cranial shot died at the military hospitals. Of these patients treated at the hospitals, 64 per cent. received their wound by the bullet of the rifle, 18 per cent. by heavy artillery, 7 per cent. by splinters of bomb-shells. Oettingen is of the opinion that a percentage still larger than 75 per cent. may be saved by an operation within twenty-four hours, for it was his experience that all those who died within twenty-four to forty-eight hours after receiving a cranial injury expired in consequence of its extent, while those who succumbed later were killed by infection.

Miscellany.

The Detection of Defectives.

A great deal of work has been done during the past two years in detecting the feeble-minded among aliens arriving at Ellis Island. It was necessary to secure tests which could be used in common among a mass of people of various races, or varying school advantages, together with a large number who were utterly illiterate.

The most hopeful method appeared to be a series of performance tests. What may be called the Healy frame, and the Fernald test, and the Healy Picture Puzzle, taken from the series of tests devised by Healy and Fernald, have been found of great value. To show the value of the picture puzzle in determining feeble-mindedness among defective immigrants, a small series has been tabulated from the case histories available at the present time. The time only has been recorded, and ten minutes allowed for the test. The picture with the cut-out parts lying by its side are shown to the alien, and he is told that this is a picture which can be completed by filling in the vacant spaces with the pieces lying by the side of the picture. He is also told that the pieces will all go in easily when placed in the right position, that it is not necessary to use force. The parts are so cut as to give a clue to the correct position by shape and color and reference to animals in the picture. If successful, the time is recorded in minutes and seconds.

A failure is recorded as "F," followed by the time within ten minutes, during which the alien works at the test before deciding that he can not do it. Normal aliens over sixteen years of age will usually solve the picture within two minutes; defectives, on the other hand, require more than five minutes, if they are successful at all. The main portion of the picture gives comparatively little trouble except to the idiot and imbecile, who here fail utterly. The fitting of the two component triangles into the large triangle takes ordinarily twice as much time as the rest of the picture.

It is here that the defective shows up so glaringly with his absurd mistakes. The fact that the two right triangles are the component parts of the isosceles triangle is not noticed at all until, by a process of elimination by fitting the rest, they are the only two pieces left on the board. At this point I have frequently seen the alien lift up the board and look underneath to see if there are some parts missing. Almost invariably this is left to the last, although during the fitting of the rest of the picture he may pick up one of the triangles only to drop it immediately in favor of some other part of the picture. Although no single test is sufficient for a diagnosis, as a general thing it will be found that immigrants who take more than three minutes to solve this puzzle correctly should be gone into further before deciding that they are normal. It has been found in practice that an alien who solves the picture puzzle in two minutes or less will usually solve the Healy frame and Fernald test equally as well, but I have not been able so far to determine the lower age limit at which success is attainable for the picture puzzle, as most of my cases have been over sixteen years of age. But in the few instances in which I had an opportunity of testing the picture puzzle in nine, ten and twelve-year-olds, they have failed to solve the triangle, although successful with the rest of the picture.

At present this puzzle appears to be essentially an adult test; that is to say, that although those under sixteen are successful in filling in the geometrical portions of the puzzle and the portions of the figures cut away, with the exception of the isosceles triangle, it requires the adult type of mind to solve this latter difficulty.—Medical Record.

Book Reviews.

CANCER OF THE BREAST. An Experience of Series of Operations and their Results. By CHARLES BARRETT LOCKWOOD, F.R.C.S., (Eng.). Price $3.00 with 234 pages. Publishers, Oxford University Press, 35 West 32nd St., New York, N. Y.

Mr. C. B. Lockwood, F.R.C.S. (Eng.), Consulting Surgeon to St. Bartholomew's Hospital of London, has presented the subject of "Cancer of the Breast" in a most fascinating manner in a monograph of that title recently published conjointly by Henry Frowde and Hodder and Stoughton. Mr. Lockwood has broken away from the stereotyped text-book style by making this book a record of his personal experiences with deductions derived therefrom. Each point of clinical, pathological or surgical value that is made he illustrates most aptly with actual case histories.

The first chapter is devoted to the clinical features of the subject and he goes into the value, pro and con, of the clinical history, family history, age, tumor mobility, rate of growth, shape, size, etc., most interestingly. Other chapters deal with morbid anatomy, types of operation, recurrences and results, in a manner that can not help but make the book of great value to both the surgeon and general practitioner. The mechanical features of the book, printing, paper, etc., are on a par with the material presented. D. W. P.

The Henderson County, Kentucky, Fiscal Court has voted unanimously to appropriate $10,000 to the newly appointed board of trustees of the Henderson County Tuberculosis Hospital Association, to be used in the purchase of a site and the erection of a building to be used as a hospital for the care and treatment of persons afflicted with tuberculosis.

Governor Fielder, of New Jersey, on April 13, vetoed the bill that would have permitted the Rockefeller Institute for Medical Research to establish a branch at New Brunswick. The action of the executive followed a spirited hearing for and against the measure. Governor Fielder in vetoing the bill said: "Under the present law scientific investigation and experiments on animals can only be conducted when authorized by a regularly incorporated medical society of this State. The change this law proposes it to permit any corporation, incorporated for the purpose, under the laws of any State or country, to conduct such investigation and experiments, without any supervision whatever. This right might safely be given to the Rockefeller Research Institute, but it would be unwise to confer it upon irresponsible persons who could obtain it by merely incorporating themselves."

A LETTER TO MEDICAL MEN.

Dear Sir:

Of all the discouraging cases which confront the general practitioner there are few more hopeless than chronic nasal and aural troubles. The difficulty of treating discharges from the ears is increased by uncertainty as to their etiology, the only fact that can safely be postulated regarding them being that they are the result of a mixed infection. For example, a bacteriological report recently obtained with reference to an ear discharge is as follows: "Films prepared direct from this swabbing contain many gram-negative and gram-positive bacilli, together with several gram-positive micrococci. The inoculated media yield cultures showing large numbers of bacillus proteus, small numbers of diphtheroid bacilli, and a few micrococci."

Mixed Infections.

A considerable volume of evidence has been accumulated showing that Phylacogen, without operation or local treatment, not only frees the sufferer from excessive secretion, but also, even when the secretion is merely reduced in quantity, entirely gets rid of its unpleasant odor.

We have the records of a large number of cases treated with Mixed Infection Phylacogen.

Two cases are supplied by a surgeon. In both, the discharge became abundant and offensive after operation. Treatment was commenced with 1 Cc. Mixed Infection Phylacogen, the injection being gradually increased until a dose of 8 Cc. was reached. The reactions in both cases were of a comparatively mild character, and the result has been entirely satisfactory.

Suppurating Antrum.

Another case is that of a professional man (43) who has suffered from a chronic nasal catarrh for some nine years, and deafness in the left ear for about a year, with difficulty in breathing through the left nostril. This gentleman does much public speaking, and in the frequent effort to clear his throat he often became quite hoarse. He received in all eight injections of Mixed Infection Phylacogen, doses up to 10 Cc. being given. The reactions after the third, fourth and fifth doses were very severe, but the later doses did not cause much disturbance. He gradually lost his catarrh, and hearing returned at the middle of the course. The result has been most satisfactory, especially as regards the improved condition of his voice and throat in public speaking.

Catarrh with Deafness.

Another case is that of a housemaid (26), who when five years old had an attack of scarlet fever. Ever since then she has had discharge from the right ear, with almost complete deafness; could only hear a watch pressed close on the ear. Treatment was commenced on April 27, 1913, with injection of 2 Cc. Mixed Infection Phylacogen, doses being gradually increased to 10 Cc. After two or three injections the discharge increased in quantity, and became thinner, and thereafter gradually diminished. After eleven injections, extending over three weeks, the patient with her left ear on the pillow heard with the right ear for the first time in twenty-one years the clock ticking in her bedroom. Since then hearing in the right ear is almost as good as in the left.

Suppurative Otitis Media.

One of the medical men from whose reports we have quoted concludes with the following remark: "In my opinion the most remarkable thing about these cases—even more remarkable than the cure of the catarrhs—is the great improvement in the general health which followed in the three to four months after the injections had been discontinued." This opinion is shared by every medical man with whom we have come in contact who has given Phylacogen a fair trial in suitable cases. Our recently issued pamphlets on "Phylacogen Therapy," 1914 edition, contain much interesting material on the new system of treatment, and we shall be glad to send them to you on request.

General Health Improved.

Very truly yours,

Detroit, Mich. PARKE, DAVIS & CO.

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